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AGRICULTURE

No. 1224



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MAJOR CROP PROGRESS AND WEATHER REPORTING

USSR CROP DEVELOPMENT FOR LATE FEBRUARY REPORTED

LD111119 Moscow SEL'SKAYA ZHIZN' in Russian 4 Mar 80 p 3 LD

[Report by Agrometeorologist N. Sakharova under the rubric: "USSR Hydro-meteorological Center Reports": "The Weather and the Crops"]

[Text] In the last 10 days of February it was mild in the greater part of the USSR's European territory. In the last 5 days it grew colder in the Baltic region, Belorussia, Moldavia, in the central chernozem region, in the North Caucasus, the Volga region and the Urals. The nighttime air temperatures dropped to between minus 10 and minus 17 degrees (in Rostovskaya Oblast and in the Volga region they reached minus 20-minus 25 and in the southern Urals minus 30). Over most of the territory precipitation was insignificant, with less than 5mm. There was a lot of rain (10-25mm) in the leftbank Ukraine and on the South Crimean coast.

Because of the thaw the snow melted by day and became compacted, its depth being reduced by 3-4cm in comparison with the previous 10 days. The deepest snow cover (over 30cm) is still in the northwest, the Volga-Vyatka region and most central oblasts. There is no snow on the fields of Krasnodarskiy and Stavropolskiy krays or in the extreme western and southern oblasts of the Ukraine. Over the remaining territory snow is 10-30cm deep.

Northeast of a line linking Grodno, Mogilev, Chernigov, Poltava, Dnepropetrovsk, Rossosh, Rostov on Don and Volgograd, winter grain crops have sufficient depth of snow cover to protect them safely from the effects of low temperatures. And so, despite a significant drop in air temperatures, minimum soil temperatures at winter crop tillering node depth remained between minus 2 and minus 6 degrees.

Conditions for wintering of perennial grasses remained satisfactory over most of the USSR's European territory. Nowhere were soil temperatures at grassroot neck depth recorded lower than minus 12 degrees.

Weather conditions for wintering of fruit crops were satisfactory. In the south, Black Sea coast area of Krasnodarskiy Kray and Georgia the average

air temperatures during the 10-day period reached 3-5 degrees, while on some days the maximum temperatures reached 15, which could have triggered off bud swelling and activated growing processes in fruit crops.

In most oblasts of Kazakhstan the last 10 days of February were 1-3 degrees colder than normal. In Western Siberia and in the southeastern oblasts of Kazakhstan it is still 1-5 degrees milder than normal. During the 10 days precipitation was insignificant. The depth of snow cover fluctuated between 11 and 30cm. In the farming areas of Western Siberia the soil temperatures at winter crop and cereal grass tillering node depth reached minus 4-minus 7 degrees and in places minus 10-minus 12. The state of winter crops and grasses is favorable.

In the Central Asian republics cool weather persisted. On the warmest days air temperatures rose to 15 degrees in southern Turkmenia, Uzbekistan and Tadzhikistan. Winter grain crops in many places were in a state of dormancy. At the end of the last 10-day period alfalfa resumed vegetation in southern valleys, but because of cold weather at night there has still been no after-growth.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

PREPARATIONS FOR SPRING FIELD WORK UNDERWAY

Moscow IZVESTIYA in Russian 29 Feb 80 p 1

[Article by F. Chernetskiy, special correspondent for IZVESTIYA, Odesskaya Oblast: "Greeting Spring With a Change From Experimentation to Practice"]

[Text] At night, the frost still hardens the ground, but in the daytime the sun already begins to hold its own. There is a revival in the fields. The machine operators are feeding the winter crops, which occupy more than 800,000 hectares of land in this oblast. Half of them have already received phosphorus and nitrogen fertilizers. The crops over 12,000-15,000 hectares are being nourished daily. In those areas where the plants are weak, this will be done somewhat later, when the soil warms up, and there are plans to provide nourishment for the root areas.

The grain growers of Saratovskiy Rayon have taken on a task that is not easy: They decided to obtain 195,000 tons of grain in the final year of the Five-Year Plan, to exceed the mean annual harvest of the 4 preceding years by 49,000 tons.

The fields of winter crops in this rayon, which exceed 36,000 hectares, are presently in good shape. At the Rodina Kolkhoz, which is the largest farm, aircraft pilots are helping feed the crops. At other farms, this is being done by the ground-based method. Local fertilizers continue to be transported to the fields. Almost 97% of the seeds of spring crops have been brought up to a first class quality. For a long time now, all of the cultivators and sowing machines have been ready to start up. In a word, the crop growers of Saratovskaya Oblast are fully armed to welcome the spring.

Preparations are actively in progress for the spring field work in other parts of the oblast also. The equipment is being made ready. A sufficient number of grain and leguminous crop seeds has been accumulated, and 92% are of first class quality. Special attention is being given at the farms to seeds of perennial grasses. While barely over half of them were graded as first class last year, at present this applies to 75%. Virtually all seeds of grain and leguminous plants in rayons such as Savranskiy, Baltskiy and Belgorod-Dnestrovskiy are rated in the highest classes.

In the Odessa area, over 200,000 hectares are taken up by corn fields. Last year, an experiment was conducted in that oblast: the kolkhozes in Bolgradskiy Rayon raised corn using a new technology on 5000 hectares, without using manual labor. Actually, the corn was only planted and harvested. The experiment was a success: 67 centners of grain was gathered on each hectare. At the present time, the same technology will be used to raise corn in all regions of this oblast over an area of 60,000 hectares. This job has been entrusted to farms with highly sophisticated agricultural methods. More than 70 Kirovets heavy tractors have been specially allocated to them. Some machines, particularly those used to level the fields, were manufactured by the farms themselves and local enterprises of the Goskomsel'khoshtekhnika [State Committee for Agricultural Equipment]. It is only the shortage of heavy BDT-7 harrows that is causing concern; there are few such machines at the farms, and those that have been allocated to them have not yet been delivered.

This year, the farmers of this oblast have planned to test new technology as well on 7000 hectares of sunflowers and 3000 hectares of soybeans. The rural workers will apply all their efforts to please their Homeland with a large harvest.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SPRING PLANTING WORK HAS BEGUN

Moscow SEL'SKAYA ZHIZN' in Russian 2 Mar 80 p 1

[Lead article]

[Text] Nature has begun to count off the first days of spring according to the calendar. And even though snow is standing and there are frosts in many parts of our country, the rural workers everywhere are already in a spring mood. They are competing for successful work to prepare for planting and to perform it in an organized manner, for creating a firm base to obtain a high harvest, to fulfill the plans and obligations for 1980 and the Five-Year Plan as a whole.

The standard-bearers in the All-Union socialist competition, outstanding workers and innovators in agricultural production are setting the example: The farms in Kazakhstan have again determined to overfulfill the plan for production and grain sale to the State. The kolkhozes and sovkhoses of Belorussia, Moldavia, Orenburgskaya, Omskaya, Kievskaya and other oblasts, krays and autonomous republics intend to attain high results.

Good news is coming from the southern region. The machine operators of Kuban', taking advantage of clement days, have deployed work to retain water in the fields; they are sowing early grain and leguminous crops. The first thousands of hectares have already been sown with oats, barley, peas and fodder mixtures. Soil is already being prepared there for corn, sunflowers and sugar beets; supplemental food is being given to the winter crops. Hundreds of units, brigades, farms and entire regions are striving to raise the largest harvests. Field work is beginning in Crimea, Central Asia and southern Kazakhstan.

It is a matter of first and foremost importance to augment the gross grain harvest, which is the chief product of agriculture. It was stressed at the 25th Party Congress that grain production is the key sector of work of Party organizations, agricultural agencies and all rural workers. In spite of the difficult weather conditions, the mean annual grain harvest in our country rose to 209 million tons in the last 4 years, which is 27 million tons more than under the Ninth Five-Year Plan. However, there is

still not enough grain, particularly for use as cattle feed. The need for it is growing constantly, and the nation's farmers are called upon to do everything they can to attain maximum production thereof. For this purpose, it is imperative to take concrete steps at all kolkhozes and sovkhozes to augment the yield of grain crops, increase the stability of agriculture and assure large harvests under any weather conditions. At the present time, for the first time it is planned to use industrial and refined technology for cultivation of a number of crops over an area of 2.4 million hectares, including over 1.4 million hectares to be used for corn grown for grain.

Spring planting is always a serious test for farmers, and those who are fully prepared, make efficient use of all material and technical resources and treasure the valuable springtime will achieve good results. At most farms in the nation, repairs of tractors, sowers and cultivators are being completed. It is planned to complete sowing at the farms in Ipatovskiy Rayon of Stavropol'skiy Kray within three work days. There, all of the equipment is already prepared to go out in the fields. Winter crops are being given food supplements and work plans have been prepared. The intention is to complete sowing work at kolkhozes and sovkhozes of the Don region within only 80-100 hours.

It is possible to properly organize sowing everywhere. But, unfortunately, in the course of mutual inspections some serious flaws have been detected in preparations for sowing. Repair of equipment has not yet been finished in Kaluzhskaya, Voronezhskaya and Novosibirskaya oblasts. Kirovets and T-150K tractors are being manufactured slowly by the Kuybyshev enterprises of Goskomsel'khoztekhnika [State Committee for Agricultural Equipment]. The problem is that the management of farms, specialists, agricultural agencies, ministries and bodies, as well as enterprises that deliver equipment, spare parts, fuel and mineral fertilizers, must become more responsible for the harvest and implement the decree of the CC CPSU and USSR Council of Ministers "On additional steps for preparations and performance of spring field work in 1980," as well as make sure that the fleet of machines and tractors, fertilizers, ameliorative and other means of improving soil fertility are ready, and that they are used properly and efficiently.

Preparation of seeds requires special attention. During these presowing days, it is imperative to check again and again the condition of the stock and bring all seeds up to a high quality, as well as to treat them with the appropriate protective and stimulating agents. Seed quality does not yet meet the high requirements in all places. Virtually all of the stock of grain and leguminous crop seeds is of high quality in the Kuban' region, Stavropol'skiy Kray and Volgogradskaya Oblast; but almost one-third of it does not meet the sowing standards, because of impurities, wetness and sprouting quality in Pskovskaya, Sverdlovskaya and Irkutskaya oblasts. It is imperative to rectify the situation without delay. Special attention must be given to preparation for sowing of buckwheat, millet, pea, sunflower, flax, sugar beet and perennial grass seeds.

The leading groups of workers, who are striving to produce the largest harvests, are using mineral fertilizers when sowing in rows, and make wide use of food supplements for plants. These procedures should now be instituted at all of the farms. At present, care of winter crops is beginning in all areas: using airborne and ground-based equipment to add fertilizer. It is imperative to make the wisest use possible of the stock of humus, composts and other organic fertilizers as well.

It is important to do all field work at the optimum time, and thereby lay a reliable foundation for a large harvest and overall yield of all agricultural crops in the last year of the current Five-Year Plan.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

MEASURES OUTLINED TO INCREASE ALTAY HARVEST

Moscow SEL'SKAYA ZHIZN' in Russian 8 Feb 80 p 1

[Article by N. Aksenov, first secretary of the Altayskiy Kray Communist Party: "The Altay Field Must Be More Productive"]

[Text] The Altay is frequently called the granary of Siberia. Today grain, potatoes, vegetables, sunflowers, sugar beets, flax, and valuable feed crops are being raised in the kray on 7.3 million hectares of plowland; 2.9 million hectares of this land were developed during the historic virgin lands epoch. In the quarter century which has elapsed since the beginning of virgin land development Altay fields have delivered 71 million tons of grain to the state storehouse. However, yields have fluctuated sharply over the years. The unsystematic mouldboard cultivation of light soils on huge expanses of steppe has led to wind erosion and dust storms, while the one-crop cultivation of wheat has rapidly exhausted their potential fertility. Suffice it to say that the average yield for the period 1961-1965 did not exceed 7 quintals per hectare.

The decisions of the March 1965 Plenum of the CPSU Central Committee, in laying the foundation for the party's current agrarian policy, radically altered the situation in agriculture. In recent years the kray has invested almost 5 billion rubles in agriculture; capital assets have increased 2.4 fold and now total about 3 billion rubles. In the 4 years of this five-year plan alone kolkhozes and sovkhoses received 22,300 tractors and over 14,000 grain harvesting combines, and thousands of disc harrows, anti-erosion cultivators, and stubble field seeders.

All this has made it possible to do a good job of increasing the fertility of the Altay plowland and using the land more efficiently. In steppe regions they have developed an anti-erosion system according to which the annual mouldboard cultivation of the soil while retaining the stubble on the field surface now encompasses 3.5 to 4 million hectares. Special anti-erosion seeders are used for sowing on 3 million hectares. Soil cultivation at right angles to the slopes, notching, and other methods of reducing water runoff and accumulating moisture in the soil are being implemented on almost one million hectares of sloping land. Windbreak strips are

being sown on 300,000 hectares as an effective snow retention method. The use of chemicals and land reclamation measures are being developed more and more extensively. Thanks to this, last year, despite the caprices of nature, an average of 13.5 quintals of grain were harvested from almost 5 million hectares and 3.46 million tons of Altay grain was delivered to the nation's storehouses. Speaking at the November 1979 Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev pointed out that the farms in Altayskiy Kray had sold a considerable amount of grain to the state. They exceeded the plans for the sale of the following crops to the state: winter rye, oats, barley, groat crops, potatoes, and vegetables.

Many teams, complexes, huge farms, and whole rayons distinguished themselves by a high degree of grain growing mastery under last year's exceptionally bad conditions. Farmers in Altayskiy, Smolenskiy, Zav'yalovskiy, Zmeinogorskiy, Krasnoshchekovskiy, Mamontovskiy, Ust'-Pristanskiy, Ust'-Kalmanskiy, Tret'yakovskiy, and Bystroistokskiy rayons harvested on the average over 17 quintals of grain, while the yield reached 21.3 quintals on fields in Petropavlovskiy Rayon.

These examples are a source of joy and bear witness to the tremendous potential of the Altay fields which can and should be more productive. You see, it is no secret that from year to year dozens of farms and whole rayons still receive yields of 8 to 10 quintals of grains per hectare. The directors and specialists of such farms as a rule plead bad weather conditions. But weather is weather, and work is work! Under equal conditions the grain growers in Zav'yalovskiy Rayon, for example, were able to raise and harvest 3.5 quintals more per hectare than their neighbor Bayevskiy Rayon. How does this happen? I could mention here agricultural practices which promote success, but, you see, the lagging rayon already knows about them.

The difference in yields is explained mainly by differences in the style of management. In Zav'yalovskiy Rayon they do not limit themselves to adopting decrees issuing from the decisions of higher echelon party organs or dictated by the necessity to carry on some agricultural campaign, but they emphasize practical achievement. The rayon makes widescale use of the initiative of leading workers and specialists. Here they skillfully transmit the experience of the experts to the young people, and recently there was a meeting of patron-instructors. A council for economic and social development was set up under the rayon party committee for the purpose of working out optimum methods of management.

In Bayevskiy Rayon the decisions adopted have not always been reinforced by practical actions, especially in the development and adherence to crop rotation, the structure of the areas sown, and the system of bare fallow. Here they have not attributed sufficient significance to snow retention and the application of organic fertilizers; party, soviet, and economic leaders of the rayon have been sharply criticized for this.

Many such comparisons can be made. It should be acknowledged that the kray party organization still has not achieved high, stable yields in all soil and climatic zones. As a result there is a shortfall of grain and a lag in its production behind the five-year plan.

After thoroughly analyzing the results of previous years, party, soviet, and economic organs in the kray planned concrete measures, the implementation of which should guarantee maximum development of grain farms, an increase in the fertility of the Altay plowland, and an improvement in land utilization during the final year of the 10th Five-Year Plan and in the future. We must emphasize that the planned measures reinforce each other and produce the best effect only when introduced comprehensively.

We attribute special significance to crop rotation, considering it the backbone of a scientifically sound system of agriculture. It has been borne out by practice over the course of many years. In this same Zav'yalovskiy Rayon strict adherence to crop rotation along with other measures has made it possible to increase the average annual yield of grain crops from 7.4 quintals in the Seventh Five-Year Plan to 15.3 quintals in the Ninth Five-Year Plan and to obtain an average of 18 quintals of grain from each hectare sown last year despite bad conditions. The production and sale to the state of the product of the fields practically doubled in the rayon during this period. At the same time the disruption of crop rotation by individual farms in other rayons has led to adverse effects. The kray is now completing work to correct errors which have been made and to restore crop rotation in accordance with the latest recommendations of science and farm specialization.

Complete mastery of crop rotation will make it possible to introduce more rapidly the contour farming system developed by the Altay Scientific Research Institute of Agriculture and Selection on hundreds of thousands of hectares in the Priobskaya and Predgornaya zones of the kray. It includes soil and water conservation management of water collecting basins, soil protection crop rotations with buffer strips of perennial grasses, soil cultivation with disc harrows and deep cultivators retaining the straw and stubble on the surface of the fields, the creation of anti-erosion surface roughness, the notching of the plowland, fallow, and sowing of grasses, regulation of the snow melt with snow plows and packers, construction of water retention, water regulating, and water channeling windrows, hollows, and a number of other measures. Experiments conducted by the institute in recent years indicate the importance of the contour farming system. The combination of soil protection cultivation of the slopes with moisture accumulation measures has made it possible to increase grain yields from 6.7 to 18.4 quintals per hectare.

What then prevents the widescale utilization of this experience? Full mastery of the system of farming developed by the scientists requires disc harrows and deep cultivators, notchers, devices for intermittent ridging,

and a number of other machines and implements. Unfortunately, industry is not turning them out in sufficient numbers, and some are not being produced at all. Several years ago the design bureau of the Altay Scientific Research Institute of Agriculture and Selection developed a number of implements for notching, for sowing and cultivating windbreak strips and other types of operations on slopes. However, their manufacture has not been organized at the plants to date.

The kray is taking measures to increase most rapidly the output of agricultural products, primarily grain. The bureau of the kray party committee and kray executive committee approved a program for the further improvement of seed growing and its conversion to an industrial basis. The Altaysortsemprom Association was set up during the course of its implementation; and work to strengthen the material and technical base of seed growing is underway. Already this year the association's kolkhozes and sovkhozes will produce over 60,000 tons of high reproduction seeds.

In striving for an increase in the biological yield of grains, we must also take more active measures to promptly harvest the crop which has been raised. Of course, the kray has many unused reserves in this area. However, we must not close our eyes to the fact that to date the load on the grain combine is still very great and reaches 200 hectares. Given such a load, the harvest period is extended to one month or more. Meanwhile, according to scientific data, the harvesting of grain crops even 10 days after it reaches full maturity leads to losses of 9 to 22 percent of the crop and up to 31 percent after another 10 days. We need to eliminate these losses -- then the Altay field alone will begin to deliver an additional million tons of grain to the state warehouses annually.

The kray is attributing prime importance to the development of feed production, and a program has been drawn up for the period 1980-1985. Kray agriculture has already begun to implement it. The program is based on the existing level of material and technical supply, and by utilizing existing reserves it will make it possible to procure not less than 30 quintals of feed units per conventional head of cattle this year and up to 35 quintals in 1985. Land reclamation plays an important role in strengthening the feed base. This year through the use of state and kolkhoz funds the area of irrigated land in the kray will be expanded 10,000 hectares and will exceed 120,000 hectares.

We know that the fate of any decision in the final analysis is determined by the level of organizational work and continuous overseeing of its implementation. We are focusing the entire kray party organization on this. Recently, for example, the bureau of the party committee reviewed the course of this work in Topchikhinskiy Rayon as part of the procedure for overseeing implementation of measures to increase soil fertility and use land efficiently during the Tenth Five-Year Plan. Existing shortcomings were analyzed and measures taken to correct them. Immediately thereafter

corrections were made in the crop rotations of all kray farms, and the necessary changes in the structure of sown areas were made in the production-finance plans for 1980.

While imposing strict demands on supervisory cadres to carry out the measures planned, the kray party committee at the same time is displaying concern for increasing their knowledge and disseminating the best experience in managing production collectives. Schools of advanced experience for farm directors and specialists are in operation. They have been established on the basis of the Altay Scientific Research Institute of Agriculture and Selection, the Kulundinskaya Agricultural Experimental Station, and a number of kolkhozes and sovkhozes. Schools for on-the-job training of young production organizers have proved highly effective: directors, chairmen, supervisors, and brigade leaders.

The Altay field has tremendous potentials at its disposal. It can become significantly more productive. It is a matter of continuously improving and raising the overall level of agriculture, making more extensive use of the attainments of science and advanced practice, introducing new varieties into production more boldly, and applying agricultural practices creatively, relying on reclamation and use of chemicals. The kray party committee constantly oversees the solution of these problems.

Proceeding on the basis of the decisions of the July 1978 and November 1979 plenums of the CPSU Central Committee, kray grain growers are making use of all their strength, experience, and knowledge to surmount existing difficulties and to honorably carry out their assignments in the concluding year of the five-year plan: to harvest 100 poods from each hectare and to sell to the state not less than 4 million tons of grain, and to successfully meet the targets for the production and sale of all types of products of farming and animal husbandry.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FARMERS ENCOURAGED TO INCREASE GRAIN OUTPUT

Moscow SEL'SKAYA ZHIZN' in Russian 26 Feb 80 p 1

[Article: "The Main Goal of Agricultural Workers"]

[Text] Grain is everyone's chief concern! This simple truth has not become obsolete over the ages. Therefore, society's gratitude for the plowmen's labor will be eternal, as the plowmen's responsibility for the fate of our daily bread will be eternal. The decisions of the CPSU and Soviet government have always spotlighted the following goal: to increase grain production steadily and to replenish the country's food and forage stores.

The meeting of this goal takes on special significance in this year, the last year of the Tenth Five-Year Plan and the year of Lenin's jubilee. The country's grain growers are called upon not only to make up the grain shortfall caused by the extremely difficult weather conditions of last year, but also to take a new step forward. It is the duty of the rural workers to do everything necessary to produce the maximum amount of grain. For example, the farms of the Ukraine are obligated to raise and harvest 53 million tons of grain, 3 million tons more than called for by the plan, on the basis of maximum intensification, specialization, and concentration of production, an improvement in field fertility, and adherence to all the requirements of agricultural practices. The agricultural workers of Kazakhstan are also full of resolve to consolidate the achievements made in past years: they plan to obtain 27 to 28 million tons of grain. Farms in Belorussia, Moldavia, and the republics of the Transcaucasus and Central Asia have also resolved to increase grain harvests.

The kolkhozes and sovkhoses of the Russian Federation -- the country's main granary -- are attributing prime importance to grain production. This year they have to harvest at least 134 million tons of grain.

Meeting the planned targets and obligations is a major and serious matter. It is practicable and feasible. Advanced experience on many farms in various regions of the country indicates tremendous and as yet untapped reserves. The following farms can be included among them: the Kuban' Rossiya Kolkhoz, Crimean Druzhba Narodov Kolkhoz, Rostov Gigant Sovkhoz,

Stavropol' Ipatovskiy Sovkhoz, Poltava Bil'shovyts'ka Pratsya Kolkhoz, Orenburg Kolkhoz imeni Komintern, Omsk Kop'yevskiy Sovkhoz, Belorussian Osnezhitskiy Kolkhoz, Kherson Kolkhoz imeni Kirov, Tula Novaya Zhizn' Kolkhoz, and other farms. Even under the most difficult weather conditions they obtain high yields of grain crops and actively and systematically apply the attainments of science and advanced practice to production.

It is the duty of party organizations, soviet and agricultural organs, and kolkhoz and sovkhoz directors to assist in the dissemination of the experience of leading workers in every way possible. Great production reserves have been uncovered at zonal scientific-production conferences held in almost all regions of the country.

Special attention must be paid first of all to winter crops in the complex of measures focused on the struggle for a high yield in 1980. Experience gained over the years shows that they produce high, stable yields, naturally, if they are given efficient care. It is important to exert every effort to help the plants develop well in the spring. To achieve this they must receive a full measure of top-dressing and solicitous care. Those farms which decide to channel the maximum amount of mineral fertilizers to winter and other grain crops are correct in their actions.

The improper practice of farms which mow down large areas of winter crops for cattle feed should be severely censured. Every hectare sown to grain must be harvested for grain! This is mandatory for each farm. All directors and specialists of agricultural production must be responsible for strict observance of this mandate.

Spring crops also have tremendous potential for increasing the grain harvest. The highest yielding varieties and hybrids sown from high quality seed must predominate in the fields. It is necessary to allocate as much organic and mineral fertilizers as possible to spring grains, especially nitrogen fertilizers which not only increase the grain yield, but also improve its quality and increase its protein content.

Grain corn must be given preference in the southern regions, especially where there are irrigated expanses. This crop repays the care of the farmers most generously and reliably. Currently industrial technology for raising corn for grain is being given a green light. It will be employed on one million hectares. It is important here to provide all the "industrial" plantings with the necessary equipment, fertilizers, and herbicides. Otherwise, progressive technology can be negated, and this will unconditionally impede the advancement in the fields of modern methods of production which guarantee large harvests of corn for grain per hectare with minimum outlays of labor.

The use of irrigated areas and their so-called "satellites" must be under special supervision now. We must persistently strive for a maximum yield from each irrigated hectare which, as experience has shown, outperforms

dry-farming hectares three to four times. To achieve this we should apply after-harvest and multiple sowings in addition to striving for the highest yields of the basic crops rice, corn, and winter wheat. And, finally, we must not condone such gross incidents of poor management as irrigated land remaining unsown or a high level of production not being adhered to on it.

The problem of a sharp increase in the production of food and fodder protein occupies a special place among the most important goals set for rural workers in the decisions of the July 1978 and November 1979 plenums of the CPSU Central Committee. This spring farms must seek out reserves for increasing yields and harvests of legumes, primarily peas, soya, beans, and lupine, as well as kidney beans, lentils, peavine, chickpeas, and other protein crops. Special attention should also be paid to increasing buckwheat and millet production.

The more grain -- the richer the Motherland! It is the solemn duty of agricultural workers to meet and exceed their plans and obligations, to harvest large crops this year, and to give the country more grain and other products from farming and animal husbandry.

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CS0: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

UZBEK COTTON GROWERS PREPARE FOR PLANTING

Moscow SEL'SKAYA ZHIZN' in Russian 3 Feb 80 p 1

[Article by correspondent A. Uzilevskiy (Uzbek SSR): "The Concerns of the Cotton Grower"]

[Excerpts] The long-expected snow finally lies on the fields of Uzbekistan, and the snow cover is building up in the mountains; it will serve as an important source of moisture for the republic's irrigated fields. But winter is shortlived in Uzbekistan. The "February windows" appear quite quickly; in a month to a month and a half the farms will begin to sow alfalfa and spring cereal crops and to plant early vegetables in the open ground.

Little time remains, but as always there are enough concerns. It is necessary to be ready for the most adverse conditions. The experience of the last 2 years has taught us this; during those years the weather severely tested the will and know-how of the Uzbek farmer. Therefore, the current presowing program is distinguished from previous ones by a more exacting demand to implement the whole complex of preparatory operations, to create a firm guarantee of a high yield, and to use local reserves and opportunities to the maximum.

Decreasing the salinity of the plowland, water supply irrigation, and preparation of irrigation and land improvement systems are the most important presowing processes for the irrigated zone, which predominates in Uzbekistan. It is necessary to flush 1.14 million hectares of saline land twice. Three quarters of these fields have already been flushed once; this is a somewhat larger area than at this time last year. A number of farms in Sverdlov'skaya, Tashkent'skaya, Andizhanskaya, and Namanganskaya oblasts have already conducted two desalinizing waterings. Specialists are giving a positive evaluation of the practice by kolkhozes and sovkhoses in the Karakalpak'skaya ASSR where the major part of the leaching operations has been shifted from the spring to the fall-winter period. The advantage is indisputable: water is used efficiently in the off-season, there is enough time for a third leaching of strongly saline areas in the early spring period, and the timely sowing of well prepared plowland is guaranteed.

Water supply irrigation greatly influences the timely obtaining of healthy, uniform cotton shoots. It has to be carried out on an area of 1.4 million hectares in the republic. They are coping well with this work in Surkhandar'inskaya, Syrdar'inskaya, and Tashkentskaya oblasts. Kolkhozes and sovkhoses in the lower reaches of the Amudar'ye have met the target for cleaning sprinklers and are stepping up preparations of the collector-drainage system. This process is being dragged out unjustifiably in Namanganskaya and Surkhandar'inskaya oblasts.

The procurement of organic fertilizers remains one of our urgent concerns. The plan for their accumulation has been markedly increased and now totals 22 million tons. Tashkentskaya Oblast, where 1.6 million tons of manure has been stored, was the first to meet the target. Farms in Khorezmskaya, Ferganskaya, Samarkandskaya, and Bukharskaya oblasts have stored over one million tons in each oblast. During the last 10-day period there was an increase of 2.5 million tons in the republic as a whole. But the plan for local fertilizer collection has still been met by only half. Farms in Andizhanskaya, Namanganskaya, Dzhizakskaya, and Surkhandar'inskaya oblasts are still meeting the schedule poorly. We must not forget that given the conditions in the irrigation zone manure is a powerful means not just for increasing soil fertility, but also in the campaign against soil incrustation.

After analyzing the work that has been done, republic party, soviet, and agricultural organs have been concentrating their main efforts on catching up lagging sectors and on completing all operations related to preparations for spring successfully and well.

The practice of the previous years indicates the high degree of effectiveness of precision sowing by the cotton grower. This not only saves valuable seed, but it also eliminates the very laborious process of thinning the shoots. A significant increase is now planned in the precision sowing area. But this requires bare seed. However, cotton mills are dragging out their preparation and are not meeting the obligatory condition of seed calibration. Cotton mills have prepared less than one third of the bare seed required in the southern oblasts of Uzbekistan where sowing operations take place the earliest and only 40 percent for the republic as a whole.

In recent years republic organs have been persistently engaged in improving the seed base of cotton growing.

This spring about 150,000 hectares of irrigated plowland will be sown with new varieties of average and fine-fiber cotton. The area sown to the variety Samarkand-2 which is well known in the fields of Samarkandskaya Oblast will be increased several fold, as will the variety Andizhan-2 on the fields of Andizhanskaya Oblast. Reproduction of the latest variety of the Tashkent families -- Tashkent-6 -- is continuing in a number of republic rayons. On southern lands Ashkhabad-25, the promising fine-fiber variety

developed by Turkmen selection experts, will undergo extensive production testing.

The recent decree of the CPSU Central Committee and USSR Council of Ministers devoted to preparations for spring set the following main goal for the country's irrigated farming regions: to guarantee highly efficient utilization of all irrigated land. Responding to this appeal with deeds, the rural workers of Uzbekistan are stepping up sowing preparations and are competing to obtain and procure 5.85 million tons of cotton and to sell to the state not less than one million tons of grain, 2.5 million tons of vegetable and melon crops, fruits, and grapes, and a large quantity of the products of animal husbandry.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

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SUNFLOWER CROP AND TESTS DURING FINAL YEAR OF FIVE-YEAR PLAN

Moscow ZERNOVOYE KHOZYAYSTVO in Russian No 2, Feb 1980 pp 13-16

[Article by Yu. P. Buryakov, Deputy Chief of the Main Administration of Grain Crops and on General Problems of Agriculture of the Ministry of Agriculture of the USSR, and V. F. Abramov, Department Chief]

[Text] Sunflowers are the main oil crop which yields 72 percent of the total output of vegetable oils in our country. Therefore, support of the national economy with sunflower seed oil and, which is no less important, with high-protein fodder largely depends on the level of its production. One cannot forget this, especially now at the beginning of the year, when the kolkhozes, sovkhoses and agricultural bodies are analyzing the results of the past year, are determining the reasons for failures and shortfalls and are planning methods of fulfilling the production and procurement plans during the final year of the 10th Five-Year Plan. Even more so since agriculture is in heavy debt to the state for sales of raw oil. During four years of the five-year plan, the kolkhozes and sovkhoses had a total shortfall of 7.5 million tons of sunflowers:

(1) Годы	(2) Площадь (тыс. га)	(3) Уро- жай- ность (ц/га)	(4) Валовой сбор мас- ло семян (тыс. т)	(5) План закупок (тыс. т)	(6) Закуплено (тыс. т)
(7) В среднем за:					
1961-1965	4495	11.2	5068	3455	3372
1966-1970	4837	13.2	6389	4565	4672
1971-1975	4474	13.2	5974	5565	4547
1976-1979	4505	12.2	5471	5983	4110

Key:

1. Years
2. Area (thousand ha)
3. Yield (qt/ha)
4. Gross harvest of oil seeds (thousand tons)
5. Procurement plan (thousand tons)
6. Purchased (thousand tons)
7. Average during

We should dwell especially on sunflower production in 1979. It is known that an extremely severe and atmospheric soil drought occurred in most regions of the country during the vegetation period. It encompassed 34 oblasts in which 3.7 million ha are located or 81 percent of the sunflower plantings. However, as indicated by the 1979 results, the shortfall of the yield cannot be explained only by weather conditions. The reduction of yield in this situation was primarily reflected in the fact that the system of cultivation in some regions was not subordinated to a reduction of the negative effect of the whims of nature and that the requirements of sunflower agrotechnics were violated. There were both objective reasons for this--fertilizers, herbicides, dessicants and PSP-1.5 implements were insufficiently allocated to the farms, there were an imperfect system of incentives and unfavorable weather conditions, and subjective reasons--the high spotty nature in yield between regions, farms and on the farms themselves among brigades and sections under essentially identical natural and economic conditions and crude violation of the elements of technology (poor precursor, sparse sowings and postponement of harvest deadlines).

The yeilds essentially do not increase mainly due to the fact that the high capabilities of this crop are still not being fully utilized. Thus, during 1960-1978 the yield of grain corn increased by 16.1 qt/ha or almost twofold, while the sunflower seed yield, despite significant changes in the level of crop cultivation, increased by only 2.2 qt/ha. Orenburgskaya, Tambovskaya and Lipetskaya oblasts, Altayskiy Kray, the Dagestanskaya ASSR and the Checheno-Ingushskaya ASSR produce unjustifiably low yields--5.9 qt/ha each. Many farms harvested oil seeds below the average oblast indicator per hectare in Kuybyshevskaya, Khersonskaya and Voroshilovgradskaya oblasts.

The achievements of the leaders indicate that production of good sunflower yields is ensured if the requirements of progressive technology are observed.

The farms of the Moldavian SSR increased their high yield of oil seeds: it comprised 20.5 qt/ha on an area of 167,000 ha. A total of 18.3 qt/ha each was harvested in Krasnodarskiy Kray, 25-26 qt/ha in Krasnoarmeyskiy, Dinskiy and Ust'-Labinskiy rayons, 17.7-20.4 qt/ha in Odesskaya and Cherkasskaya oblasts and 20.3-20.7 qt/ha in Saratskiy and Bolgradskiy rayons of Odesskaya Oblast.

Many farms achieved even more discernible results of high agricultural skills. In 1979 32.3 qt/ha of oil seeds were harvested on the Kolkhoz Pamyat' Lenin of Chernobayevskiy Rayon of Cherkasskaya Oblast, 31.6 qt/ha on the Kolkhoz imeni Gagarin of Glodyanskiy Rayon of the Moldavian SSR, 30.4 qt/ha on the Kolkhoz Pobeda of Dinskiy Rayon of Krasnodarskiy Kray and 33.1 qt/ha on the Kolkhoz imeni Kalinin of Novomoskovskiy Rayon of Dnepropetrovskaya Oblast.

Many sections and brigades produced record yields. The brigade headed by D. I. Dolya harvested 37 qt of sunflowers per hectare on the Kolkhoz Aurora of Nikopol'skiy Rayon of Dnepropetrovskaya Oblast, that of I. N. Rarukhi from the Sovkhoz imeni Michurin of Krivorozhskiy Rayon of the same oblast harvested 35 qt/ha and the brigade of N. S. Kurpitko from the Kolkhoz imeni Lenin of Dinskiy Rayon of Krasnodarskiy Kray harvested 35.5 qt/ha.

The low sunflower yields are the result of the fact that a number of oblast agricultural administrations, managers and specialists of many farms and procurement and processing organizations are not devoting attention to sunflowers, are underestimating the total importance of their cultivation and are not providing a high level of production discipline in its cultivation, harvest and processing. The work practice of most managers and specialists of the farms where low yields are produced indicates that they are unaware of the fact that the decisive factor at the present stage in sunflower production is not only the material and technical base, but also clear observation of the technological process of crop cultivation.

Reduction of sowings had a negative effect on the level of sunflower production: they decreased by almost 260,000 hectares during four years of the 10th Five-Year Plan compared to the Eighth Five-Year Plan. This occurred mainly in the RSFSR, the Ukrainian SSR and the Moldavian SSR. The agricultural bodies should analyze this problem carefully on each kolkhoz and sovkhos and in each rayon and oblast and should adopt the necessary measures to restore the planted areas and the failure to utilize them according to designation.

The gross production of oil seeds must be brought up to 7,700,000 tons with a yield of 16.7 qt/ha in 1980 to fulfill the plan of sunflower seed sales to the state in a volume of 6,200,000 tons and to lay in seed stocks in the amount of 319,000 tons. The country's kolkhozes and sovkhos have large reserves at their disposal for successful solution of this problem.

The experience of Chadyr-Lungskiy Rayon of the Moldavian SSR on introduction of the industrial technique of sunflower cultivation yielded positive results in 1978-1979. A total of 24.9 qt of seeds per hectare was produced in 1978 and the yield comprised 27.5 qt/ha on an area of 2,500 ha in 1979, which is 9 qt/ha greater than during cultivation by ordinary technology.

The multiple use of new machines, increased doses of fertilizers, highly effective herbicides and high-yield varieties and more improved organization of labor were of decision significance in increasing the yield with the industrial technology of cultivation. Uniform distribution of plants on the plot was achieved and the plantings were distinguished by high uniformity and the absence of weeds.

The use of the industrial technology of sunflower cultivation in Chadyr-Lungskiy Rayon permitted a reduction of labor expenditures up to 13 man-hours per hectare and the net income reached 371 rubles per hectare, which is 158 rubles more than by the ordinary technology, and the saving throughout the rayon exceeded 390,000 rubles. Most of the farms of Ust'-Labinskiy Rayon, the Kolkhoz imeni 22nd CPSU Congress and the Kolkhoz Krasnaya Zvezda of Dinskiy Rayon of Krasnodarskiy Kray, the Kolkhoz Pobeda of Pokrovskiy Rayon and the Kolkhoz imeni Kalinin of Novomoskovskiy Rayon of Dnepropetrovskaya Oblast and the Kolkhoz Pamyat' Kirov and the Kolkhoz imeni Kalinin of Zernogradskiy Rayon of Rostovskaya Oblast assimilated the new technology well, having produced an oil seed yield of more than 25 qt/ha.

Sunflowers will be cultivated on an area of 100,000 ha by the new industrial technology this year. To do this, herbicides, fertilizers, chemicals and PSP-1.5 attachments for the combines are being allocated. It is now important to refine the rayons and farms in which the use of industrial technology is being planned. It would be more feasible to distribute the sunflowers in zones where it is planned to cultivate corn by industrial technology so as to utilize the entire complex of machines and implements and also the experience accumulated by the machine operators.

The specific weight of sunflowers in the structure of crops should be increased to 10 percent of the crop-rotation area in the spring upon review of the structure of planted areas, that is, the plowed areas of this crop on the country's kolkhozes and sovkhoses engaged in cultivation of it should be brought to equal saturation.

One of the technological operations to which even less attention is being devoted on the kolkhozes and sovkhoses is sufficient cultivation of the soil surface. Good uniformity of the soil is not being achieved due to the use of soil-cultivating machines imperfect in design and because of this there is a more than 20 percent shortfall of the harvest annually. Therefore, careful cultivation of the soil surface in spring is one of the main operations in the preplanting soil preparation system with preliminary dressing of crown ridges and open furrows with cultivators. The best soil uniformity is achieved by using toothless drag harrows, ShB-2.5 smoothing harrows, MV-6.0 and VPN-5.6 levellers, the KVG-4 attachments to the KPG-4 cultivator, USMK-5.4 cultivators and RVK-3 combination soil-cultivating units. However, the mass production of these machines has not yet been organized and some of them are also low-productive machines. During the next few years, domestic wide-cut cultivating units like the Hungarian Kombi-8.8 must be developed which would provide loosening of the soil and breaking up of clods, smoothing of the surface and rolling of the soil.

Most farms have the necessary hardware at their disposal for planting within 5-6 calendar days. But this is not being observed everywhere. In 1979 some rayons of Stavropolskiy Kray, Khar'kovskaya and other oblasts required more than 10 days to plant sunflower seeds. Cases of too early

and too late planting deadlines were observed. In the first case the seeds are located too long in cool soil, become moldy and the plantings are sparse by 15-20 percent and in the second case the seeds are frequently planted in insufficiently moist soil and field sprouting of them is reduced.

The kolkhoz and sovkhoz managers and specialists frequently do not give the proper attention to the denseness of the plant stand. There are frequently considerably fewer plants due to poor soil preparation and different depths of planting the seeds and loss of plants during the period from planting to harvest than recommended by science and leading practice for achieving high yields.

The main role belongs to fertilizers in the overall complex of measures which ensure an increase of soil fertility and yield. A total of 1.2-1.5 qt of ammonium nitrate, 2.5-3 qt of super phosphate or 30-40 tons each of manure are applied per hectare during fall plowing on farms with high cultivation technique, which permits the plants to consume moisture more economically and ensures a yield of oil seeds of 25-30 qt/ha or more. Preplanting application of granulated super phosphate (P_{10}) to the rows, which contributes to an increase of yield by 1.1-2 qt/ha, should be considered as an additional procedure.

However, throughout the country as a whole, an inadequate amount of mineral fertilizers is still being applied to sunflowers. The planning bodies are allocating 3 qt of liquid fertilizers per hectare of crop planting, but stock discipline is being violated on most farms and fertilizers are being allocated for other crops. This situation is observed in Lipetskaya, Volgogradskaya, Voronezhskaya and other oblasts. Therefore, the agricultural bodies and farm managers and specialists have been called upon to fundamentally change their attitude toward fertilizer application to sunflowers. The kolkhozes and sovkhozes have the opportunity this year to apply no less than 4 qt per hectare of crops, providing nitrogen, phosphorus and potassium in the recommended ratio.

Sunflowers are sometimes severely infected with fungal diseases during some years due to rainy weather during crop formation. Much labor and many funds are expended to control them. The measures used, due to failure to observe individual procedures, frequently do not yield the proper results. However, as indicated by practice, the damage of storage rot and gray mold and other diseases can be reduced significantly. First, harvest of the crop must be done somewhat earlier if the diseases spread when the moisture content of the seeds is within the range of 18-20 percent or more. In this case seed cleaning and drying operations must be carried out in a unified flow with the harvest. Second, pre-harvest drying of the sunflower plants on the root--dessication with magnesium chlorate (15-20 kg/ha), reglone (2-3 kg/ha) and plav (50 kg/ha)--should be utilized extensively, having used all available stocks of preparations for this. Third, all disease-infected plants should be removed in the seed plot and the

seeds should be carefully cleaned of the pathogenic agents of storage rot and gray mold to restore the health of the seed material and pre-treatment with TMTD or phenothiram at the rate of 3-4 kg per ton of seeds should be calculated.

A large reserve for increasing the harvest of oil seeds is adherence to deadlines and high quality of harvesting. The grain losses frequently reach 8-10 percent or more on some farms due to poor preparation of equipment, violation of the harvest deadlines and the absence of reliable organization of the harvest conveyor.

The optimum length of the sunflower harvest deadlines is 5-6 days and only within these deadlines can seed losses be reduced to a minimum. Incidentally, the harvest continued for more than 30 days in Nikolayevskaya and Voronezhskaya oblasts and Krasnodarskiy Kray in 1979, which naturally led to a shortfall of yield. The farms cite the shortage of transportation. However, the equipment was used unproductively here. For example, the combines were serviced with re-equipped tractor trailers and the trucks operated on hauling the sunflower seeds for the state during harvest of the sunflowers in many rayons of Dnepropetrovskaya and Zaporozhskaya oblasts.

Grain combines are frequently insufficiently allocated for the harvest and the load on the harvesting machine exceeds 130 ha, for example, in Kuybyshevskaya and Orenburgskaya oblasts, which is two times greater than the norm.

The main reserves for increasing the yield of sunflowers include an increase of the quality of the harvesting technique based on the available material and technical base. Actually, the fleet of agricultural machinery now permits all the sections of the combine-threshing floor-processing enterprise conveyor already developed in practice to be joined into a unified flow with scientific organization of labor and highly productive use of equipment and to ensure harvest operations during the best agrotechnical deadlines. Those farms which, having a powerful drying base at their disposal, begin the harvest within the earliest deadlines when the moisture content of the sunflower seeds comprises 18-20 percent, are proceeding properly. In those places where there are no dryers, heat generators, active ventilation equipment and so on must be utilized. There is the capability of reducing losses by a minimum of 2 qt/ha with early harvest deadlines and this increase will repay the expenditures for cleaning and drying of the moist seeds.

An increase of product quality yields an enormous national economic effect at modern scales of production. An increase of the oil content of sunflower seeds by 1 percent permits additional production of 53,000 tons of oil, which is equivalent to sunflower production at the rate of 110,000-120,000 tons in Poltavskaya or Khersonskaya oblasts.

The situation that has developed during the past few years with regard to the low quality of oil seeds is causing even greater concern. For example, almost one-third of the sunflowers came into the grain receiving enterprises and oil-pressing plants in 1978 with moisture content and grade higher than the limiting conditions with 5 percent defective seeds. The kolkhozes and sovkhoses of Belgorodskaya and Ul'yanovskaya oblasts sold especially high lots of low-quality seeds to the state. All this is the result of the fact that many kolkhozes and sovkhoses and also procurement organizations are not providing themselves with an adequate number of closed threshing floors, storage facilities and drying units.

The task of the agricultural bodies is to adopt urgent measures to increase the quality of oil seeds by construction of closed threshing floors and drying facilities, organization of the harvest within compressed deadlines, cleaning and drying of the seeds in seed-cleaning machines on the day it arrives at the threshing floor and also shipment to grain-receiving enterprises without delay.

Among the factors of intensification which ensure an increase of the gross harvests of agricultural products, well-organized seed-growing occupies an important position. Sunflower seed production is being converted to an industrial basis. A total of 280,000 ha or essentially all the seed plots has been concentrated on 1,162 special sovkhoses of the country. The material and technical base of the special farms for seed production is being improved.

Moreover, the technology of cultivation and harvest of seed plots does not meet the requirements of science and leading practice on some farms. The seed plots are too thick and grown up with weeds, few fertilizers are applied, the harvest is drawn out unjustifiably and cleaning and drying on the threshing floors are carried out with long delay on some farms. For these and other reasons, the specific weight of unconditioned seeds sown during 1976-1979 reached 10-30 percent, while it exceeded 49 percent in Tambovskaya Oblast and 43 percent in the Bashkirskaya ASSR in 1979.

Therefore, in order not to repeat the errors of past years, the proper material and technical base must be created on the seed-breeding farms, sowing of elite seeds following the best precursors must be provided and careful maintenance of the plots must be carried out.

The existing system of material incentives essentially do not stimulate an increase of the gross sunflower seed harvest, while a decrease of the profitability of its production due to an insufficient procurement price led to the fact that this oil crop has become a secondary one. Therefore, production persistently requires a fundamental change of the material incentives by increasing the counter sale of combifeeds and cakes, issue of grain units to workers engaged in sunflower production up to 15 percent of the yield achieved above the plan and to increase the purchase prices of 1 qt of oil seeds.

The machine operator becomes the direct conductor and executor of agrotechnology at the modern stage of agricultural development. And it is no accident that a large number of mechanized sections and detachments made up of better qualified machine operators is being included this year in the struggle to achieve high sunflower yields. Therefore, it is very important to organize mass education and to recruit the production leaders, scientists and leading specialists to this work in order to teach young machine operators the production adjustment and regulation of cultivators, seed drills and sprayers, skillful mastery of equipment and the fundamentals of modern agriculture. The duty of the agricultural bodies and farm managers and specialists is to provide the best conditions so that each day become a new step in supplementation of knowledge and in increasing the skills of those who will be going out to the fields tomorrow.

The operating efficiency of agricultural workers is largely determined by the level of organization of labor. The results of the past agricultural year must be deeply and extensively analyzed, the accumulated experience must be generalized and specific methods for further improvement of matters must be planned.

Production charges and working plans of spring field operations should be developed, the composition of the mechanized detachments, brigades and sections should be clearly determined and measures of moral and material stimulation of people should be planned today on the farms.

There is no triviality in this complex multiplan work. Any inaccuracy and any poorly thought-out decision may result in unrecoverable losses in the fields. Therefore, collective opinion, collective experience and the advice of specialists are so important in working out the strategy and tactics of struggling for the harvest of the final year of the five-year plan.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

EFFECT OF WINTER WEATHER ON CROPS IN LATVIYA REPORTED

Riga SOVETSKAYA LATVIYA in Russian 15 Feb 80 p 2

[Article by V. Knava, agrometeorologist]

[Text] By the time vegetation stopped in 1979, the winter crops were well-developed and had undergone tillering on most of the fields. How will they fare in the winter?

In December, winter hardiness of the plants diminished somewhat as a result of the unstable and mainly warm weather. The crops in western regions, where snow often covered the soil and thawed repeatedly, were particularly susceptible to the weather conditions. In the eastern regions, a snow cover was established by the 10th of December. Minimum soil temperature at the depth of the tillering node did not drop below -5 or -6 degrees in December.

The first inspection of the winter grain crops was conducted in early January. Samples were collected from an area of about 30,000 hectares. The results revealed that 7% of the winter rye samples and 8% of the winter wheat samples were excessively thinned out.

January was characterized mainly by frosts with frequent snowfalls and snow storms. In the middle of January there were some thaws, during which the snow cover thawed somewhat and became firmer, and in the last 10 days of January there were significant frosts.

In the first half of February, the freezing weather with snowfalls continued, but the sun appeared more often, even though for short periods of time. The snow cover was up to 30-40 cm thick in the fields of this republic, 50-57 on the Vidzemskaia and Aluksnenskaya uplands. In most areas, the soil was frozen to a depth of 20-50 cm, and in some parts in eastern Latvia up to 60-75 cm.

Thus, the winter crops were in frozen soil, under a tall cover of snow, in January and the first half of February. The minimum soil temperature at the level of the tillering node of winter crops (3 cm) was in the range of -1 to -7°.

The condition of the winter crops was inspected again in late January and early February by 20 hydrometeorological stations and 125 farms in this republic. The findings revealed that there was virtually no change in condition of winter rhye, as compared to early January. The condition of winter wheat worsened somewhat: 13% of the samples were too thinned out, and this applied to 28% of the winter rhye and 27% of the winter wheat last year at this time. In some regions, mainly in the northeast, conditions developed that were instrumental in causing the plants to perish, since the winter crops were under a thick cover of snow, in some areas in thawed soil. In the spring, the crops in these areas will require special attention and care.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

'PRAVDA' PREVIEWS FEBRUARY WEATHER USSR-WIDE

LD151947 Moscow PRAVDA in Russian 1 Feb 80 p 6 LD

[Unattributed report under the rubric "The Weather in February": "Winter Meets Spring"]

[Text] February is colloquially known as the side-warmer [bokogrey]. It is also known as the divide: "It divides winter in half." It is a time of snow storms and thaws. What will this February be like? A PRAVDA correspondent put this question to the USSR hydrometeorological office. This is what he was told.

In the European part of the USSR except for the northeast this month should be relatively warm. The frosts will gradually ease. In the second half of February frequent thaws are possible in the Central Belt. These thaws are known by farmers in the south as the "February windows," at this time the first spring work begins in the fields. Snow storms will rage in the North and Central belt. In Murmanskaya and Arkhangelskaya oblasts, the Karelskaya ASSR and the Komi ASSR in the first and second 10-day periods it will be about minus 20-25 degrees at night and about minus 12-17 degrees by day, and in the Komi ASSR it will be about minus 30-35 degrees at night and about 20-25 degrees by day. It will become warmer in the third 10-day period.

In Leningradskaya, Vologodskaya, Pskovskaya and Novgorodskaya oblasts in the first half of the month it will be minus 7-12 degrees by night and 0-minus 5 by day. But individual falls in temperature to minus 20 degrees are possible. In the second half it will be minus 3-8 by night and 0-plus 5 by day.

In the Baltic and Belorussia the air temperature is expected to be approximately the same but there will be more frequent thaws.

In the central oblasts in the first and second 10-day periods it will be minus 8-13 degrees by night and minus 3-8 degrees by day. On individual days frosts will intensify at night to minus 17-22 degrees. In the third 10-day period it will become warmer.

In the Volga and Volga-Vyatka regions in the first half of the month frosty weather with snowstorms will persist, it will be minus 17-22 degrees by night and minus 8-15 degrees by day. In the second half the air temperature will increase to plus 2 degrees.

In the Ukraine and the North Caucasus in the second half of the month it will be minus 5-10 degrees by night and minus 2-plus 3 by day, in northern oblasts there may be individual falls in temperature to minus 15-17 degrees. In the second half of the month it will be 0-minus 5 by night and plus 5-10 by day.

On the south coast of the Crimea and the Black Sea coast of the Caucasus the weather is expected to be favorable for relaxation--there will be many sunny days and the daytime temperature will gradually increase from 5 to 15 degrees above zero.

In the middle and south Urals during cold spells it will be minus 21-26 degrees by night and minus 11-16 degrees by day, and at the beginning of the month as low as minus 30 degrees. In the second half of the month occasional temperature rises to plus 1 degree are possible.

In southern oblasts of West Siberia and in North Kazakhstan it will be minus 15-20 degrees by night and minus 10-15 degrees by day. However during colder periods the frosts could reach minus 27-32 degrees by night and minus 18-23 degrees by day.

In the south of Krasnoyarskiy Kray in the Baykal and Transbaykal are in the coldest periods; the thermometer will register minus 35-40 by night and minus 20-25 degrees by day. In the third 10-day period a rise in temperature to 0-minus 5 is possible.

In Amurskaya Oblast and Khabarovskiy Kray February will be marked by snowstorms in Primorskiy Kray a rise in temperature to plus 3-8 degrees is possible at the end of the month.

In Kamchatka and Sakhalin severe frosts are not expected but there will be more precipitation than normal.

In northern regions of Siberia and the Far East blizzards and snowstorms will be a frequent phenomenon. In the Evenkiyskiy Autonomous Okrug, mainland regions of Yakutiya and Magadanskaya Oblast frosts will reach minus 45-50 degrees at times.

In the Central Asian republics it will be minus 3-plus 3 degrees by night and plus 5-10 degrees by day. At times the air temperature will rise to plus 15 degrees while on individual nights a fall in temperature to minus 10 degrees is possible.

CSO: 1824

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

SPRING PLANTING IN BASHKIRSKAYA ASSR--The farmers of Bashkiria are busily preparing for spring. Large amounts of fertilizer have been carried out on the fields. Equipment is being repaired on schedule. Semidry seed treatment is going on full swing, and the seeds have been brought up to sowing quality. New and highly productive cultivars are rapidly being moved to the fields of kolkhozes and sovkhozes. For example, the area to be covered by Donetsk-6 barley will increase from 200 to 10,000 hectares. Astor oats will occupy 11,000 hectares, versus 5000 last year; Moskovskaya 35 and Mironovskaya Yarovaya will be planted on one-fourth of the wheat fields in this area. But the demand for these cultivars will not be fully met. The fact of the matter is that the system used to reproduce seeds has some substantial flaws. Procurement practices do not allow for prompt replenishment of stock of local cultivar seeds. The grain product administration of this republic is putting up with a lack of responsibility for large batches of seeds of promising cultivars. The Bashkir farms will trade and purchase part of the seeds. However, there are delays in many of this republic's rayons with preparation and shipment of these batches of seeds. The Bashkir field workers have deployed a broad competition to raise a good harvest in the final year of the Five-Year Plan, to augment the output of grain and other agricultural products. At the present time, it is very important to eliminate all flaws in preparing for mass scale travel to the fields and treat seeds promptly. [Text] [V. Orlov, correspondent of SEL'SKAYA ZHIZN', Bashkirskaya ASSR, Moscow SEL'SKAYA ZHIZN' in Russian 29 Feb 80 p 1] 10,657

WINTER CROPS FED--Kiev, 28 Feb (TASS)--The pilots in the agricultural aviation were the first to greet this spring. They have deployed work to nourish winter crops at farms in southern oblasts. All of the conditions have been provided for the pilots to succeed in their work: The farms are equipped with high-power agrochemical complexes outfitted with modern equipment, loading and unloading machinery; landing strips have been constructed in the fields. All this permits application of fertilizers over large areas and at the optimum time. The area occupied by winter crops in this republic is the largest in our country. This year, pilots will have to feed every other hectare of crops. The dosage of fertilizers applied according to technological maps is determined by the fertility of the

soil and precursors, as well as distinctions of wheat cultivars. Supplemental nitrogen fertilizers have been scheduled for use when the plants are at the "shoot" stage in the region with sufficient precipitation. This will not only affect the yield, but significantly improve grain quality. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Feb 80 p 1] 10,657

SPEEDY CROP SOWING--Krasnodar, 28 Feb 80 (TASS)--Sowing work has advanced from the southern foothill plains to the steppes of Kuban!. Hundreds of crews are already at work on the fields of Ust'Labinskiy, Belorechenskiy and Timashevskiy rayons. Taking advantage of the warm days in February, the machine operators are harrowing the fall-plowed fields, performing pre-sowing cultivation and planting of early spring grain and leguminous crops. Barley, oats, peas, fodder mixes and grasses have been planted over tens of thousands of hectares. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Feb 80 p 1] 10,657

HIGH GRADE SEEDS OBTAINED--Pavlodar 1 Mar 80 (correspondent of SEL'SKAYA ZHIZN')--The farmers of this oblast have brought all seeds of grain crops up to sowing quality earlier than last year. About 80% of the seeds meet the requirements for first and second class ratings, and this applies to 100% of the seeds in the farms of Uspenskiy and Mayskiy rayons. The grain growers of the Mirnyy, Fedorovskiy sovkhoses and Pobeda Kolkhoz will sow only first-class seeds. Much work was done in this oblast in the winter on strain changing. This year, the farms near the Irtysh River will expand the area on which Karagandinskaya-2 wheat will be planted, as it has proven itself well in prior years. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Mar 80 p 1] 10,657

NEW CORN-RAISING TECHNOLOGY--Cherkessk, 1 Mar 80 [D. Daurov, foreign correspondent for SEL'SKAYA ZHIZN']--The Circassians call corn "nartukh," which means "grain of heroes." For this reason, the farmers of Karachayevo-Cherkesskaya ASSR always give preference to this crop. They will currently raise over 7000 hectares of corn using the knowhow of Moldavian machine operators. At the present time, the kolkhozes and sovkhoses of this region will receive the necessary technology, highly effective herbicides and hybrid seeds. The oblast administration for agriculture has held a seminar with the main agronomers from the farms; classes have begun with specialists on the intermediate level and machine operators in Prikubanskiy, Adyge-Khabl'skiy and Khabezskiy rayons. All organizational problems pertaining to work using the new technology have been resolved at a recent seminar-conference of corn growers, which convened recently in the city of Cherkessk. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Mar 80 p 1] 10,657

SOWING PREPARATIONS--Dushanbe--The kolkhozes in Kulyabskaya Oblast have driven out sowing machines to the foothills, to land that is not irrigated. As shown by the experience of progressive farms, early sowing promises a good harvest. The farms in the region of irrigated agriculture are also ready for planting grain crops. The kolkhozes and sovkhoses are planting corn to be used for grain on irrigated tracts. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Mar 80 p 1] 10,657

SNOW RETENTION--Ust'-Kamenogorsk. The hum of motors has not stopped on the snow-covered fields of the Kolkhoz imeni Kirov in Glubokovskiy Rayon. Winter moisture is being retained on 4,000 hectares on the farm. A specialized team carries out the snow retention. Mechanizers P. Korotayev, V. Semenov, and F. Melekhov daily exceed their norms 2 to 2.5 times. Sovkhozes and kolkhozes in Tavrichesky, Shemonaikhinskiy, and other rayons in East Kazakhstan are retaining moisture at rapid paces. White windrows have covered 150,000 hectares of the snowy virgin lands. [Text] [Moscow SKL'-SKAYA ZHIZN' in Russian 21 Feb 80 p 1] 7990

WINTER GRAINS--Maykop (Adygeyskaya Autonomous Oblast). Spring has come to the Adygey area. Snow has left the fields, opening the "February windows" -- the fair days which make it possible to begin field work. Today mechanizers have taken machines to the fields in two rayons of the autonomous oblast -- Giaginskiy and Krasnogvardeyskiy. The sowing of oats and peas has begun. The main hopes of the Adygey farmers are tied to winter crops this year. For the first time last fall the plowing of semi-fallow for winter crops was carried out here simultaneously with the threshing -- at the best time according to agricultural practices. Judging from the condition of the plants, oblast farmers have a real chance to meet the plans set in the fall -- to harvest an average of no less than 39 quintals per hectare and to achieve a gross harvest of up to 425,000 tons of all winter grain crops. [Text] [Moscow TRUD in Russian 26 Feb 80 p 1] 7990

SPRING SOWING--Dushanbe. Yesterday kolkhozes in Kulyabskaya Oblast took the sowing units to the foothills and unirrigated lands. The experience of leading farms has shown that early sowing promises a good yield. The farms located in the irrigated farming zone are also ready to sow grains. [Text] [Moscow TRUD in Russian 1 Mar 80 p 1] 7990

DEER RESCUE--Aldis Tomin'sh, a driver from the Latvian Sovkhoz imeni Oshkalna, appealed to the householders of the near-by village: "Give refuge to my 'passenger'." Along the way he had picked up a roe deer which was weak from hunger. Catching sight of man, she got to the highway with difficulty and poked her head into his palm. They led the forest guest

which had gotten into trouble into the cattle-shed. After "dining" on an armful of fragrant hay, the deer again went off into the forest. This winter the snow cover in Latvia has reached over one meter, and the denizens of the forest need help. Friends of nature have outfitted feed troughs. Here they supply dried besom moss hay and potatoes. Areas for sheltering the animals for the night are cleared in the spruce forests by bulldozers. But the February winds cover up the paths to the forest dining room, and the wild animals, forgetting their caution, frequently come to man. [Text] [Moscow GUDOK in Russian 21 Feb 80 p 1] 7990

CSO: 1824

LIVESTOCK FEED PROCUREMENT

PROBLEMS IN THE MIXED FEED INDUSTRY

Moscow SEL'SKAYA ZHIZN' in Russian 27 Feb 80 p 2

[Article by I. Skachkov: "Pro Forma Letters Instead of Mixed Feed; a Return to What Has Been Published"]

[Text] "Inception of a Sector," was the heading on 16 October 1979 in our newspaper, under which an article was published pertaining to the flaws in construction of kolkhoz, sovkhoz and interfarm mixed feed enterprises. The editor received a number of reactions to it, expressing the fact that the article had been discussed at joint meetings of agricultural specialists and builders, and that steps were outlined to expedite the start-up of such enterprises.

V. Kolot, head of the Krasnoyarskiy Kray Administration for Agriculture (KAA), reported that the KAA and Krasnoyarskkraysel'stroy [Committee for Construction] association, after developing specific measures to put construction starts on line, were able to deliver 10 shops out of 13 under construction. At the present time, the new enterprises have begun to produce. Steps were taken to expedite construction in Vologodskaya Oblast. Two shops have been started up and four more are being completed. Large mixed feed plants in Krasnodarskiy Kray, The Vyselkovskiy and Leningradskiy plants, have begun production.

This is not, unfortunately, the way everyone reacted to the criticism. Instead of taking steps to accelerate construction of important projects, "on the basis of the actual situation" in Yaroslavskaya Oblast, as N. Sokolov, head of the oblast administration for agriculture, informed us, the target date for starting mixed feed shops was deferred to the second quarter of this year. But even now, as shown by an additional inspection, the "actual situation" is far from optimistic. They could consider another postponement!

Deputy head of the oblast agricultural administration, V. Urlapov, limited himself to the statement that work is proceeding slowly on the 15 mixed feed plants and shops in Tul'skaya Oblast. The target dates for starting up plants and shops under construction in Irkutskaya Oblast have begun to "wander." They were postponed to the current year. But it is

already obvious, as reported by V. Romanov, deputy chairman of the oblispolkom, that one of the plants, in the village of Sorty in Zalarinskiy Rayon, will not be delivered even in 1980, since it was "not supplied with the required [limit] contracted work."

We received a particularly strange response from the deputy chairman of the Council of Ministers of Severo-Osetinskaya ASSR, N. Belyakov. In general, he considers construction of "mixed feed plants inexpedient at kolkhozes and sovkhoses." Supposedly, the capabilities are available in the republic's administration for grain products "to assure the production of mixed feed in amounts required to meet all existing orders of kolkhozes, sovkhoses and other organizations." According to him, there is even a possibility of shipping mixed feed production "beyond the boundaries of this republic."

The letter appeared strange for two reasons. Last year, 261,000 tons of concentrated feed was utilized in the livestock industry in Severo-Osetinskaya ASSR (according to the data of the USSR Central Statistical Administration), only 142,000 tons of which was in the form of mixed feed. The rest was used as part of the simplest feed mixes. Where then is the "extra mixed feed"? The second cause refers to the fact that five mixed feed plants are presently under construction in this republic, at the kolkhozes imeni Dzerzhinskiy, imeni Kirov, "Kavkaz" "Zarya" and imeni Kalinin. If the capabilities of existing enterprises are adequate, why then was the decision made (we assume without the knowledge of the republic's Council of Ministers) to erect these enterprises? This year (and we hope that the republic's Council of Ministers is also aware of this fact) an interfarm shop for the production of granulated and pellet-form mixed feed is being erected in Beslan.

Is not the fact that the plans for construction of such projects were not fulfilled by even one-half and that the 1979 target date for putting mixed feed shops on line at three farms was not met the reason why comrade Belyakov talked about the "inexpediency of construction" of kolkhoz mixed feed enterprises. Let us mention that the plan for mixed feed production in this republic was not fulfilled either.

Unfortunately, such a situation has developed elsewhere also. Last year, 132 kolkhoz, sovkhos and interfarm mixed feed enterprises were under construction, and 74 of them were priority projects. Over half are still unfinished. At sovkhoses, the plan for putting such enterprises on line is only 39% fulfilled, and two-thirds less capacity was delivered than in 1978.

A proper lesson should be extracted from this sad result. After all, where construction is done well business is also good with respect to products for the livestock industry. In the Ukraine, for example, about 400 interfarm mixed feed enterprises, with an overall capacity of 9 million tons of mixed feed per year, were erected in the last few years.

At the start of this year, 80% of the rayons in this republic had mixed feed enterprises, the capacity of which made it possible to process all feed grain used for livestock and poultry at the kolkhozes and sovkhozes. This republic's enterprises have delivered 150,000 tons of mixed feed in 1 year in excess of the plan. There has also been overfulfillment of the mixed feed production plans in Kurskaya, Rostovskaya and Omskaya oblasts, as well as the Baltic republics.

But in such oblasts as Yaroslavskaya, Irkutskaya and Tul'skaya, where the builders are not fulfilling the plans for erection of mixed feed enterprises, the assignments for production of mixed feed for the livestock industry are not being implemented. As we see, there is a direct connection here.

At the present time, the program for construction of kolkhoz, sovkhoz and interfarm mixed feed enterprises is even more intensive. At the sovkhozes of the Russian Federation alone, there must be construction of such enterprises with an overall capacity of 2350 tons of mixed feed per day. The enterprises that "migrated" from last year's roster must also be finished. For the farms need mixed feed, and not idle letters.

10,657
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LIVESTOCK FEED PROCUREMENT

MAKING BEST POSSIBLE USE OF SCARCE LIVESTOCK FEED

Minsk SEL'SKAYA GAZETA in Russian 3 Feb 80 p 2

[Article by F. Mirochitskiy, first secretary of BSSR Ministry of Agriculture: "For Wintering--Strict Control"]

[Text] For the workers of kolkhozes and sovkhoses, agricultural organs and heads and specialists of the republic's farms, no more important task exists at this time than the organized ending of stabled maintenance of livestock. This winter is extremely difficult, a shortage of feed is being experienced, for which reason success of the matter depends on the ability of cadres to overcome difficulties, not to permit destruction of livestock on animal-husbandry farms, to boost productivity of dairy and beef cattle and to preserve the increase.

The course of stable maintenance shows that, despite difficulties, workers of animal-husbandry farms have not allowed a drop in gross production of milk and meat to occur, while purchases of products in all categories of farms compared to the corresponding period of last year have increased. Poultry breeders are doing particularly well. They have achieved a significant increase of eggs and poultry flesh and are successfully fulfilling plans of purchases. Kolkhozes and sovkhoses of Ivanovskiy, Chashnikskiy, Svetlogorskiy, Bobruyskiy and certain other rayons have achieved a significant growth in productivity of the dairy and meat herd.

At the present time animal-husbandry workers are competing for further improving the efficiency of the sector. The duty of local agricultural organs is to provide them all-out aid in this work. This is especially important now with the onset of the final and, therefore, the most responsible stage of livestock wintering.

The main consideration in the work of all cadres at this moment is the struggle for rational use of feed, a careful, well-planned economic expenditure of it involving feeding in prepared form fortified with food supplements. For the remaining wintering time, kolkhozes and sovkhoses have feed in the amount of only 6.2 quintals of fodder units per standard livestock head. This is about 80 percent of the level of the corresponding period of

last year. It is true that the quality of the fodder, especially hay, haylage, silage, root crops and grass flour is considerably above that of recent years.

First of all, it will be necessary to increase the accountability of cadres of all units for the safe preservation and expenditure of fodder, the complete elimination of cases of mismanagement in this work. It is necessary to strive for the highest return from each kilogram of forage. On the farms, a careful accounting should be kept of remains of forage stocks, instances of their spoilage, destruction or loss in transportation. It is very important to complete in the shortest possible time transporting of fodder to animal-husbandry farms from river bottom land and remote fields. It is no less important, while taking into account reproduction schedules of the female stock and arrival of offspring, to refine and correct monthly plans of forage use and to differentiate its distribution while taking into account productive features of the animals.

Possibilities exist for adding to fodder stocks from tree and lake vegetation, food wastes and wastes of processing industry. And maximum use should be made of them. Heads and specialists of kolkhozes and sovkhoses and agricultural administrations of rayispolkoms and oblispolkoms, main administrations and trusts have the responsibility of looking after the situation locally of farms with inadequate feed. The purpose is to determine how long forage will last them, to map out and implement measures of helping them in allocations of fodder or shifting of livestock to other, better provided farms.

A decisive struggle should be waged everywhere to reduce outlays of fodder per production unit. The way lies in good preparations for feeding, enrichment with all sorts of feed supplements and making up of maximally balanced rations in terms of energy, digestible protein, macro- and micro-elements and vitamins. This means that each animal-husbandry farm should organize pulverizing, steaming and calcination of straw, mixing it with silage, haylage, root crops and concentrates. Synthetic nitrogenous and mineral substances should be added to such mixtures. In this connection, uninterrupted work by feed shops and other feed-preparation techniques is of exceptional importance.

The experience of a number of farms shows that proper organizations of feed preparation increases the effective use of fodder by 14-16 percent. At Znamya Kommunizma Kolkhoz of Starodorozhskiy Rayon, for example, there are 1,012 cows in the public herd. In the first half of January, the additional milk yield of each of them amounted to 8 kilograms and gross production grew by 17 percent. Since the start of winter, two feed stands have been in operation, pulverizing straw, thermal-chemically treating and mixing it with fodder crops, haylage, silage and hay. To this mixture coniferous paste is added in a calculation of 500 grams per head and concentrated feed--200 grams per liter of yielded milk.

Wintering of livestock is proceeding at the requisite level at breeding plants Ross' of Volkovskiy, Korelich' of Korelichskiy rayons, at sovkhoses Krasnoberezhskiy of Gomel'skiy, Brodnitskiy of Ivanovskiy rayons and at many other places. On these farms, the return from each fodder unit is rather high.

Unfortunately, work is not organized in this way everywhere. Serious lapses and miscalculations exist on kolkhozes and sovkhoses of Brestskiy, Orshanskiy, Lidskiy, Matislavskiy, Shklovskiy and several other rayons. Despite the numerous, most precise directives provided cadres on questions of wintering of livestock, they are being carried out by far from all heads and specialists of farms.

At Kolkhoz 1 Maya of Smolevichskiy Rayon, livestock is being provided with 50 percent of its fodder. But that is not being used efficiently. Fodder shops are working with interruptions, rations are put together formally. Consequently, the productivity of the animals is dropping. On the animal-husbandry farms there is an absence of the necessary zootechnical work, big losses of piglets are permitted. For such mismanagement, the heads of the kolkhoz must assume the strictest accountability.

The struggle for proper organization of reproduction of the herd must be carried out everywhere. In this connection, a number of concrete measures should be implemented, especially now, with the onset of the period of mass breeding of the female stock. Those farms are operating properly where cows in their dry period and sows in advanced farrow have been placed in special barns or in separate stalls. This makes it possible to feed them with special rations. Valuable components for cows in their dry period are hay, good summer straw and root crops and for farrow sows--grass or hay flour. Such animals should be provided in sufficiency mineral and vitamin feeds. The animals should be taken on active walks.

The interests of the work require urgent completion on all animal-husbandry farms, especially dairy farms, of equipment of birthing sections or special stalls for calving by cows. In such sections, the calves that have been born should be suckled as a minimum for five days or even a week. Cages in which the increase is kept in the initial days should be equipped with electric lights. These measures, as shown by practice, make it possible to reduce wastage of young stock to a minimum from dyspepsia and other gastro-intestinal diseases.

Special attention should be given to the insemination of all the female stock. The first measures to be taken include covering of calved cows and farrowed sows. Now is the time to make a selection of 2.5-3 verified young pigs per basic sow for the purpose of obtaining from them as a minimum twice as many piglets as were obtained in past years. The selection of heifers for reproduction should be sharply increased. It will be necessary

to set aside into separate groups all female stock from which increases were obtained, to arrange their walks and control over the physiological condition and to see to it that the cows after calving are inseminated no later than after an interval of 60 days and sows a month after farrowing.

Attention should not be relaxed in regard to fattening of livestock, especially those head which are to be sold to the state in the first half of the year. These animals should be put into separate groups and their feeding should be intensified.

It is important on kolkhozes and sovkhozes to ensure maximal sales to the population of piglets and chicks on a contractual basis. It is also necessary to conclude contracts on calves and removing them with the onset of the pasturing period. The rate of purchases of milk and meat surpluses from the population should be increased. Kolkhozes and sovkhozes and agricultural administrations of rayispolkoms and oblispolkoms are duty bound to provide assistance to industrial enterprises and other organizations in the creation of subsidiary farms and animal-husbandry farms.

The precise operation of all life-support systems on animal-husbandry farms, especially of the microclimate, is of great importance. It is sufficient to say that an insignificant departure from the norms of the temperature regime and content of gases in barns results in daily losses of weight increases of the young stock of neat cattle and pigs ranging from 50 to 100 grams. It is necessary to devote more attention to providing animals with water. Questions relating to the uninterrupted of systems of manure removal, sewerage, lighting, provision of fodder and milking should not be removed from control. The complex of preventive measures against ailments of the animals should be implemented on time.

The success of this work largely depends on people. In working with them, it is necessary to be guided by the instructions given in the decree of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee "On Launching of the All-Union Socialist Competition of Animal-Husbandry Workers for Increased Production and Procurement of Animal-Husbandry Products in the Winter Period of 1979-1980."

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LIVESTOCK FEED PROCUREMENT

MORE BALANCED FEED RATIONS STRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 30 Jan 80 p 1

[Editorial: "Returns From Ration Must Be Increased"]

[Text] The first 3 months of the period that cattle spend in the barns have passed, 3 months of intensive work by farm workers who are striving, even during this difficult time, to augment the productivity of livestock and poultry, to increase production and sales to the State of milk, meat and other valuable products. As they develop the socialist competition for well-organized wintering of livestock, the workers in this field are striving to single out of the many concerns and jobs determining the success of fulfilling their great responsibilities, the important element on which both the productivity of animals and economy of the sector depend to a decisive extent. This element is at present optimum use with the greatest return of each kilogram of hay and silage, haylage and concentrates, and all other types of feed.

The achievements of the leading farms indicate how great are the unused reserves in this regard. For example, at the Nikonovskoye hog-raising sovkhoz, in the Moscow suburbs, young stock consumes slightly more than 3 feed units per kg weight gain, and 6.7 feed units per kg gain were used at the Chervonoznamensk interfarm enterprise in Odesskaya Oblast. The best farms in Leningrad Oblast spend only 1 feed unit per centner milk. At the same time, more than 11 feed units per kg weight gain of hogs are written off in the farms of Georgia, 22 feed units per kg beef gain in the kolkhozes and sovkhozes of Turkmenia, and 2.4 feed units per kg milk in the farms of Uzbekistan. The high outlay of fodder does not yield additional production, and milk yield and weight gain remain low.

The chief cause of the low return on the feed ration is the inadequate level of intake and unbalanced diet. There are still instances when the supervisors and specialists at the farms are not achieving advance development of the feed base, and they are little concerned with preparing fodder and enriching the diet. Many kolkhozes and sovkhozes stock up only 10-12 centners or less feed units per arbitrary head of livestock for the winter, whereas twice this amount is needed to achieve a stable,

and high level of productivity. When the feed is poor, a significant part of the nutrients in the sparse diet is expended to keep the animal alive, and only crumbs remain for production. As a result, such farms obtain less than 700 kg milk, or about 80 kg beef gain, or 115 kg pork increment for every 1000 feed units used. At the same time, at the leading farms, where the zootechnical standards for livestock feed are observed, 1000 kg milk, 130-140 kg cattle increment and 250-280 kg hog weight gain are obtained. In other words, by following the example of the leading farms, the other farms in our country could increase by almost 1.5 times the production of milk and virtually double meat production with the same stock of fodder.

Under the conditions that were established this winter, it is imperative to take every step possible to improve animal nutrition. We refer to the comprehensive use of additional feed sources: gathering food waste and waste in timber felling areas, production of wood pulp flakes, pine needle meal and production of amidoconcentrate supplements. We also refer to meticulous processing of fodder: thermochemical processing of straw, yeast concentrates, preparation of granulated mixed feed, as well as enrichment of rations with mineral, protein and vitamin supplements. This important work has been well-organized at the farms of Lithuania and Moldavia, Mordovskaya and Bashkirskaya autonomous republics, Ryazanskaya, Gor'kovskaya, Penzenskaya and Saratovskaya oblasts in RSFSR. But at the kolkhozes and sovkhoses of Kazakhstan, on the contrary, over 27% of the feed producing and feed preparing plants are idle. A significant part of the feed processing equipment is also idle at farms in Permskaya, Kemerovskaya, Novosibirskaya and Irkutskaya oblasts.

The overexpenditure of feed is largely attributable to the shortage of protein in the diet. In feeding cattle, the absence of a significant part of the protein can be compensated with synthetic sources of nitrogen: carbamide and ammonia salts. Broader use thereof is often impeded by the low carbohydrate content of feed, in which case the urea becomes toxic. One can enrich the ration with digestible carbohydrates by using a new method of processing straw: barothermal treatment for saccharification. This effective technology, which has undergone extensive trials at the kolkhoz imeni Uritskiy in Gomel'skaya Oblast, and at farms in Mariyskaya ASSR, merits more active introduction. The workers in this industry should organize production of autoclaves for this purpose. It is imperative to expedite introduction of such new methods as production of molasses from peat and wood pulp.

Analysis made by scientists revealed that, even with the feeding level attained, one can increase by 200-300 kg the annual milk yield, if differentiated feeding of cows is set up in accordance with lactation period and the physiological condition of the animals. Not infrequently, newly calved, old milk cows and cows that have just started to give milk, newborn and adult animals are kept together, and all of them are fed the same average rations. If this were corrected, a rapid and significant effect could be obtained.

Increasing the return from rations is not a brief campaign only for the winter, but a constant organizational and agrozootechnical job. In the long-range plan, this refers to promoting feed production to the level of a sector, increasing significantly the production of feed and improving the quality of the diet by refining the structure of fields, expanding the planting of more productive and protein-rich crops, improving the agrotechnology of cultivating them, using the necessary doses of fertilizers and upgrading the method of stocking feed.

The July (1978) plenum of the CC CPSU has outlined a specific program of effective measures to strengthen the feed base for the livestock industry.

It is the duty of farm workers to persistently work on performance of the tasks set forth by the plenum, to obtain a further increase in production and sale to the State of milk, meat and other farm products.

10,657
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LIVESTOCK

CATTLE CENSUS IN MOLDAVIA

Rishinev SOVETSKAYA MOLDAVIYA in Russian 2 Dec 79 p 3

[Article by I. Tobultok, deputy chief of Moldavian SSR Central Statistical Administration: "Important Work--On the Start of the All-Union Livestock Census"]

[Text] In recent years, the republic's workers have achieved certain successes in the development of animal husbandry. It is enough to say that the average yearly gross production of animal-husbandry products for the first three years of the Tenth Five-Year Plan (in comparable prices) increased compared to the corresponding period of the Ninth Five-Year Plan by 19 percent versus agricultural production's growth of 14 percent. Average annual production of meat (dressed weight) grew in this time 19 percent, milk--27 percent and eggs --25 percent.

The number of livestock has increased. The number of meat cattle increased by 20 percent from 1 January 1971 to 1 January 1979, including cows by 23 percent and pigs by 28 percent.

The achieved level, however, far from satisfies the needs of the people for animal-husbandry products. We still still have to increase by far production of meat, milk and eggs.

The detection and employment of new reserves will be abetted by the decree of the USSR Council of Ministers for carrying out as of 1 January 1980 the All-Union Livestock Census. It is being conducted on all state, cooperative and socialized farms without exception, on kolkhozes, interfarm associations (enterprises and among kolkhoz members, workers and employees and other groups of the population.

The forthcoming census is of great state importance. Its purpose is to obtain complete and accurate data on the number of livestock, its sex and age

make-up and distribution for all categories of farms. This will make it possible to locate reserves for increasing production of animal-husbandry products and provide the opportunity for planning organs, ministries and departments and local soviets of people's deputies to compile more accurate, scientifically based plans for the development of this most important sector of agriculture.

The Moldavian Council of Ministers has commissioned the Moldavian SSR Central Statistical Administration and its local organs to conduct from 1 to 10 January 1980 a census of neat cattle, pigs, sheep, goats and horses in rural localities, in cities and in urban-type settlements.

This campaign is to be handled by specially selected cadres of counters, approved by the ispolkoms of city and rayon soviets of people's deputies on presentation by local organs of state statistics.

The success of carrying out the census will largely depend on the course of preparations for it and on the measure of responsibility of each person who participates in this important work.

The livestock census is placed locally on the heads of information and computing centers, stations and inspectors of state statistics. It is to be conducted under the direct supervision of ispolkoms of city and rayon soviets of people's deputies. Special attention must be paid to the selection of counters and controllers, their training, preparation and holding of seminars of chairmen and secretaries of ispolkoms of rural and village soviets of people's deputies and explanatory work among the population.

Taking into consideration the importance of the census, the republic Council of Ministers order the Council of Kolkhozes, the ministries of agriculture and food ministry, the Moldvinprom, Moldplodoovoshchprom, Moldtabakprom agroindustrial associations and other ministries, departments and organizations to carry out on time all preparatory work and to ensure qualitative holding of the livestock census.

This will require first of all carrying out on each farm in the requisite manner zootechnical count and accounting and creating inventory commissions. The inventorying is to be conducted with obligatory physical counting of the livestock.

Heads of kolkhozes, interfarm associations (enterprises), sovkhoses-plants, sovkhoses and other farms that have livestock must provide counters with accurate, verified data on the actual presence of livestock as of 1 January 1980.

Counters have the obligation of keeping track of timely and properly held inventorying of livestock, collection and control of reports obtained from heads of farms and of the comparison of reports with accounting documentation. On sovkhoses and other state farms, these measures are to be implemented by farm managements with the participation of aktiv representatives

and on kolkhozes and interfarm enterprises--the kolkhoz board or the interfarm-enterprise council and auditing commission.

The census of livestock personally owned by citizens should be conducted by the counter by means of a thorough inspection of all yards (homesteads), survey of the owners and physical livestock count with the participation in rural areas of representatives of the local soviet of people's deputies and a representative of the local aktiv and in cities and urban-type settlements --a representative of the city (rayon) soviet of people's deputies.

For the purpose of ensuring complete count of the number of livestock among kolkhoz members, workers and employees and other groups of the population both in rural localities and in cities, control visits will be carried out of yards for physical verification of livestock.

Great attention should be paid to mass explanatory work. It is necessary to create in the countryside that public climate in which kolkhoz members and sovkhoses workers would feel that by rearing livestock and poultry at home they are performing useful state work.

The duty of personnel of ispolkoms of soviets of people's deputies, information and computing centers, stations, inspectorates of state statistics, the aktiv, heads of farms and all participants in this important state campaign is to conduct in a timely way and on a high level preparatory work and to complete in a qualitative manner the livestock census.

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AGRO-ECONOMICS AND ORGANIZATION

ECONOMIC FACTORS AFFECTING AGRICULTURAL PRODUCTION

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 11, Nov 79 pp 83-84

[Article by R. Aliyev, candidate of economic sciences, section head of the Azerbaijan Scientific Research Institute for Economics and Agricultural Organization: "The Relationship of Capital Investment Growth Rates and Production Output"]

[Text] The resolution of the CPSU Central Committee and USSR Council of Ministers, "On Improving Planning and Reinforcing the Effect of the Economic System in Raising Production Efficiency and Work Quality," places at the heart of managerial activity the responsibility for insuring the efficient use of every means available to the national economy, while, at the same time, relying heavily on intensive growth factors. A major role in this effort is assigned to measures directed at increasing the effectiveness of capital investments. The more rapid growth in the value of gross production as compared to the increase in fixed capital is the major source of the rise in the effectiveness of capital investments.

An analysis of the voluminous data from the leading sovkhoses of the Azerbaijan SSR indicates that the more rapid growth of gross production guarantees a reduction in expenditures of labor and resources per unit of production. In these cases, expenditures of living and materialized labor can be increased. However, because of the more rapid growth in the output of gross production in comparison to capital investments and production costs, both a reduction in all costs per unit of production and an increase in the productivity of labor in general are being achieved.

The effect of capital investments and fixed capital on the economy of expenditures is determined by the following rules. If, after capital investments, the amount of production remains unchanged, then economy will be obtained only through a more rapid reduction in expenditures of living labor compared to the increases in expenditures of past labor. If, however, the amount of production does indeed increase, then a supplemental economy of expenditures will result for both past and living labor. However, the supplemental economy will be obtained only upon the indispensable condition that the growth of production output will surpass the growth in the overall bulk of labor expenditures.

By what means will economy of production time be achieved?

On lands which are not suitable for improvement, a reduction in past and living labor is achieved mainly by increasing the productivity of parcels which are subject to improvement.

For an investment in agricultural technology, an economy of production time is dependent upon the extent of mechanization in the production processes.

The peculiarities of capital investments in long-term plantations consist in the fact that the expenditures in the establishment and cultivation of a planting are presently included under fixed capital. On kolkhoz and sovkhoz balance sheets, the cost of establishing long-term plantations and caring for them to the bearing state is included in the total of fixed capital. While, in actuality, fruit plantations become genuine fixed capital only with the onset of the exploitational stage. This method of accounting creates a misleading representation of capital allocation and the coefficients of removal and renovation of fixed capital, and so forth. For example, on specialized fruit-growing sovkhozes, the amount of fixed production capital for agricultural purposes totals 51,200 rubles per 100 hectares of arable land, taking into account the cost of new plantations--but, by excluding the cost, it is 26,700 rubles. On grape-growing sovkhozes, these costs total respectively, 43,300 and 31,000 rubles. This same situation is observed in calculations of capital allocations for labor, the average annual cost of fixed capital, capital output, capital production capacity, and so on.

At present, the high relative importance of new plantations derives from the fact that the republic is pursuing a course of extending the specialization of the economy, in which the size of the area devoted to long-term plantations is being expanded.

In the normal planting cycle, an orchard of any of the stone fruits reaches the bearing stage seven to eight years after planting (early maturing types take five years); vineyards bear the fourth year after planting. The exploitational period of common orchards and vineyards averages 40 years--for early maturing varieties it is 30 to 35 years. Consequently, in the proper planting cycle, in order to regularly replace old, moribund plantings with new ones, it is necessary to annually replant 2.5-3.0 percent (in certain cases even more) of the existing acreage. This means that roughly 20-25 percent of the acreage of fruit orchards and 10 percent of vineyards will always be occupied by new, immature growth, and the cost of this, under the accepted accounting system, will be figured in with basic production funding. In our opinion, the cost of new, immature plantations would best be included, not in fixed capital, but in working capital. Moreover, the cost should be listed separately on the balance sheet as unfinished production. This will significantly facilitate economic analyses of the use of fixed capital and provide an accurate representation of * operations of agricultural enterprises.

Plantings and vineyards are assigned agricultural land (frequently even plowed land) which annually has yielded production and a specified total net profit. Therefore, in an evaluation of the economic effectiveness of expenditures on long-term plantations, it is essential that the period from establishment of the planting to its bearing be taken into account.

In addition, the increase in capital investments in the establishment of a planting (vineyard) as a compensation for harvesting losses should be taken into account. To calculate the total reimbursement of losses incurred from the withdrawal of acreage, which should be added to the increase in direct capital investments, one must determine the average annual net profit yielded by these lands, and multiply it by the time elapsed to the beginning of bearing of the new plantations.

Capital investments have a maximal effect when the amount of fixed capital is increased as a result of them, and at the same time measures are implemented which entail an increase in soil fertility, harvesting yield, and cattle productivity. Unfortunately, in practice, the totality of capital construction is seldom observed in agricultural production.

Take, for example, the vinicultural sovkhoses, "Krasniy Partizan," and imeni Kuybyshev of Dzhaililabadskiy Rayon in the Azerbaijan SSR. These farms are situated in identical natural-economic and climate conditions. However, from data for the years 1968-1977, the sovkhos, "Krasniy Partizan," handled with much more success the task of increasing agricultural production output and lowering costs. This can be explained by the fact that, in contrast to the sovkhos imeni Kuybyshed, carries out all of the measures in full.

True, on this farm the supply of fixed production capital is 86 percent higher. But, the crux of the matter does not lie only in a quantitative variation. The sovkhos, "Krasniy Partizan," uses all types of fixed capital more completely and uniformly. While expanding and improving its fixed capital, the collective of the sovkhos, "Krasniy Partizan," fought aggressively to increase soil fertility and to implement all agrotechnical measures at the right time and with a high level of quality. For each hectare of area to be treated, eight to nine tons of organic, and 1.5 tons of mineral fertilizers are applied annually, whereas on the sovkhos imeni Kuybyshev, only about 3.5 tons of organic, and 1.1 tons of mineral fertilizers are applied.

The harvesting yield of grain crops for the aforementioned farms totaled respectively, 19.7 and 15.2 quintals per hectare, grapes--84.6 and 32.9 quintals per hectare, and milk yield per each cow--1996 and 1428 kg. The sovkhos, "Krasniy Partizan," achieved its high productivity by using internal reserves without additional capital investments, that is, it employed the total of production organization.

On the sovkhos imeni Kuybyshed, farm development is lop-sided, the land is not improved, technology is not used to its fullest potential, and capital

investments are spread thin. For precisely these reasons, the farm has not achieved a reduction in cost and expenditures per unit of production.

It should be emphasized that overestimates of the importance of fixed capital and underestimates of such a decisive factor as increasing soil fertility are major reasons for the shortage of sovkhozes.

An economic analysis of sovkhozes of the Azerbaijan SSR conducted over the past 10 years showed that in all cases a more rapid increase in gross production output compared to fixed capital resulted in a reduction of the output-capital ratio for production.

The majority of sovkhozes in the Azerbaijan SSR were organized in recent years. In 1960, the republic had a total of 86 sovkhozes, and in 1965, there were 285, in 1975--496, in 1977--566. In this period, huge sums were allocated for bolstering their economic viability. Part of this capital will not be fully functional in the forthcoming period. Consequently, a certain time on newly organized farms will find gross production output for each ruble of fixed production capital at a relatively low level. But, despite this, the majority of sovkhozes last year lowered the output-capital ratio for production by comparison with the preceding years.

As studies have shown, production output per unit of fixed production capital on several sovkhozes is increasing at higher rates. On these previously mentioned sovkhozes, the degree of specialization approached the optimal level, which allows the fuller use of achievements of scientific-technical progress for the intensification of production. On those farms, investments in both fixed and working capital are put to efficient use. The tendency which we have been discussing is also therefore quite clearly revealed.

On the whole, for the Azerbaijan SSR, the growth rate of gross agricultural production markedly lags behind the growth rates for capital investments. But, for the sovkhozes of the republic, one observes a different picture. This has to do with a sharp increase in the acreage of long-term plantations in preceding years. With the graduation of the large plantations to the fruit-bearing stage, gross production of grapes, fruits, and green tea-leaves was increased. In 13 years (1965-1978), the production of grapes on sovkhozes increased by a factor of 6.5, fruits by 6.2, and vegetables--3.2. As a result, the cost of gross production increased approximately threefold, and capital investments by a factor of 2.2. Because of this, indicators of the effectiveness of capital investments and fixed production capital sharply improved during the ninth, and in the beginning of the 10th Five-Year Plans. This improvement occurred mainly due to substantial changes in the direction of the specialization of production, which permit the use of the favorable conditions of this region to the greatest advantage.

The data cited above confirm the existence of objective rules under which the growth rates of production output surpass the growth rates of fixed

capital. The most complete and systematic employment of them constitutes the major means for resolving the problem of increasing the economic effectiveness of capital investments.

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AGRO-ECONOMICS AND ORGANIZATION

IMPROVEMENT OF INTERBRANCH AGRO-INDUSTRIAL COOPERATION URGED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 11, Nov 79 pp 34-41

[Article by Valeriy Aleksandrovich Klyukach, candidate of economic sciences, VNIESKh section leader: "Improving the Interrelationships of Enterprises in Sectors of the Agro-industrial Complex"]

[Text] The functioning of the nation's economy as a unified national-economic complex is immediately manifested in the strengthening of the interdependence of all sectors of the national economy--there is a complication of intersectorial and internal economic contacts in general public production, and there is an intensification of the integrated processes involved in all or some of the phases of production and distribution of various products. All of which greatly complicates the planning and control of material production, and tasks both theoretical and practical economics with a number of important assignments in the area of improving planning direction for the national economy.

The CPSU Central Committee and the USSR Council of Ministers have adopted the resolution "On Improving Planning and Increasing the Impact of Economic Mechanisms on the Raising of Production Efficiency and Work Quality," in which a number of measures is set forth for the rational utilization of production allocations and material, labor, and financial resources, as well as for bolstering the state of the economy and eliminating losses in the national economic area.

The task consists in achieving, through the balanced development of all sectors of the national economy, a significant increase in the efficiency of public production, the growth of labor productivity, the improvement of quality, and the elimination of losses in various types of products, thereby assuring a steady rise in the national economy and the well-being of the soviet people.

The solution of this problem depends to a great extent on the level of development of the sectors comprising the agro-industrial complex, which in turn is called upon to assure the production, storage, and processing of agricultural products in the required amounts.

The use of available reserves depends greatly on the balanced development of the sectors which ensure an increase in the production of an agricultural product on the one hand, and the sectors which ensure its availability to consumers on the other hand.

The nonrational use of significant amounts of an agricultural product and its losses thereof can to a large extent be explained by disproportions existing in this area. One of these is the imbalance between the growth in production volume for an agricultural product and the increase in capacity for its processing and storage. This leads to significant losses in the realm of production, stockpiling, processing, storage, and sales.

In view of this, an analysis of losses in the APK [agro-industrial complex] system takes on particular importance. Inadequate study of this problem results not just in the existing losses of the present, but can lead to further large losses in the long term. Moreover, not knowing the real value of the losses incurred as a result of the inadequate level of development of the processing industry and infrastructure, it is difficult to precisely determine priority in the development of the various sectors of the agro-industrial complex, while results derived from their activities cannot with sufficient reliability reflect the sectors involved. At the same time, a reduction in losses represents an important means for increasing the output of an agricultural product and improving its usage. Thus, a resolution of the problem of eliminating losses should be considered a positive factor, which opens the way, as was indicated at the November (1978) CPSU Central Committee Plenum, for improvement in the functioning of the national economy, and aids in the realization of the most important objectives in the further increase of production efficiency.

Currently, great importance is being attached to stepping up the development of the processing industry and infrastructure. Resolutions of 25th CPSU Congress and the subsequent CPSU Central Committee have had a salutary effect on the growth rate of this sphere of the economy.

Along with the introduction of new production capacities and the improvement of their disposition, measures have been taken to accelerate the tooling up and technical supply rates of operational enterprises, to raise mechanization and automation levels of production and auxiliary operations, to reduce the role of manual labor, to improve the use of agricultural raw material and the nutrients contained in them, as well as the development of high-quality foodstuffs, to increase the production of multifarious products conveniently packaged for the consumer, and to implement new packaging equipment, specialized transport, bulk shipments and bulk storage of raw materials and processed products, and other progressive methods and means of transportation and storage. Nonetheless, a plethora of questions remains to be dealt with.

In addition to this, at the present time, the problems related to shortcomings of the sectors providing agricultural products to the consumer are intensifying. In his speech before the November (1978) CPSU Central

Committee Plenum, L. I. Brezhnev remarked, " . . .with the expansion of production scales, the providing of these products to the consumer with the least amount of loss is taking on ever greater importance. We have stated this time and again. However, losses of grain, potatoes, vegetables, and fruit remain quite considerable."

Due to an imperfection in the planning for intersectorial proportions, agriculture is receiving an inadequate amount of equipment. This is leading to a disruption of the optimal agrotechnical periods for conducting agricultural operations, and to a harvest shortfall, not to mention significant losses. According to data from state variety-trial grounds, the delay in the sowing of winter wheat in Krasnodarskiy Kray, in disregard for the optimal agrotechnical periods, is leading to a significant reduction in harvest yields for all varieties sown in the kray. Indeed, with all varieties participating in the trials for every 24 hours of sowing delay, the harvesting shortfall averages roughly 45 kg of grain from each hectare. Still greater losses of grain occur with imprecisely timed gathering of the ripened harvest. The USSR Ministry of Agriculture during the 9th Five-Year Plan, at a number of state variety-trial grounds, conducted a check on harvesting losses of grain crops depending on periods of gathering. Overall grain losses on kolkhozes and sovkhoses owing to the delay with the gathering of the harvest and problems with the combines averaged 2.5 quintals per hectare nationwide, while for primary crops over the entire harvested area--116 million hectares--it was around 30 million tons. The yearly grain shortfall caused by the failure to observe the proper agrotechnical time-frames for agricultural operations--all due to technological shortages--is estimated by economists at 35 to 40 million tons. In addition to this, about 5 percent of the grain harvest is lost yearly in open areas and in storerooms not adapted to this use. Grain losses during storage, curing, and processing in the grain-products system total, according to data from the USSR Ministry of Procurement, 6 to 8 percent of the volume of government outlay, with a steady systematic increase in the absolute scale of these losses. Inadequate grain storage facilities on kolkhozes and sovkhoses also leads to grain losses. For example, their capacity on farms in 1976 totaled only 107.9 million tons (including the 62.3 million tons for model farms), while more than 120 million tons awaited storage in them. In the bumper crop year of 1978, silo capacity totaled 117.3 million tons (including 71.5 million tons for model farms), while more than 140 million tons awaited storage on farms.

As a result of official disagreement during the construction of grain elevators and storage facilities, their capacitative increase lags behind the growth rate of grain production. The average annual operational start for all types of granaries during the 9th Five-Year Plan declined in capacity to 9.4 million tons, as opposed to 11.3 million tons in the preceding plan. In 1976-78, the capacity of the total start increased to 10.7 million tons, nevertheless remaining below the average annual start for the 8th Five-Year Plan.

It is essential in strategies for eliminating grain losses that we improve the system employed by enterprises in the post-harvest processing, storage,

and reprocessing of grain by locating grain-processing enterprises close to the point of production and consumption of the grain. In certain cases, it would be useful to set up multifunction stations on kolkhozes and sovkhoses for the receiving, post-harvest processing, and storage of the entire gross grain crop. As necessity dictates, grain marked for delivery to the state should be brought up to commercial standards at these stations and transported to grain-processing enterprises in the post-harvest period. With the creation of these stations, capital investments could be lowered by 20-30 percent, and operational expenditures by 15-20 percent, while the actual grain yield (due to a reduction in losses) would increase by 15-20 percent. The essential condition for the implementation of such measures is a solution to the construction problem of the entire system of grain storage facilities, and enterprises and installations for its initial processing under a unified plan independent of departmental affiliation.

In the 10th Five-Year Plan, a projection was made for the development of elevator capacities for grain storage of 30 million tons. During the last period, capital investments were advantageously applied to the expansion of the network of large elevator systems of the USSR Ministry of Procurement, in light of the lag in construction of kolkhoz and sovkhos granaries, the deficit of which increases from year to year. According to data from VIM [All-Union Scientific Research Institute of the Mechanization of Agriculture] at current construction rates, this deficit by 1980 will exceed 60 million tons. Such allocation of capital investments is linked to the antiquated procedure under which the temporary storage of grain in kolkhoz and sovkhos and interfarm storage facilities is not permitted, and facilities for these purposes are not under construction. As a result, a great deal of grain annually piles up on kolkhoz and sovkhos threshing room floors, in open areas, and in storage places not adapted for this use, which leads to major losses.

It is essential that we solve the problem of building on the farms themselves intermedial grain storage facilities which meet contemporary technical requirements, with a corresponding re-allocation of overall capital investment sums doled out by the union Ministry of Agriculture for construction of storehouses for commercial grain. With the placement of the new objectives of the grain-harvesting enterprises, it is essential to consider the possibility of reducing overall state expenditures connected with grain transport.

The further development of the principles of self-sufficiency in relationships between kolkhozes, sovkhoses, and granaries also demands a review of fiscal policies for the sale of substandard grain in the direction of bringing them into line with actual expenses, and returning grain profits to farms in the form of balanced feeds and feed mixtures.

As a result of the inadequate growth of sugar-refinery capacity, the length of time needed for processing sugar beets averaged 155 days during the years, 1966-1970. Under the 9th Five-Year Plan, the average annual processing

time was cut to 133 days, but not because of an increase in refinery capacity, but because of a sharp decline in the gross yield of sugar beets brought on by unfavorable climatic conditions. Lengthening of storage periods for sugar beets due to the extension of processing time leads, according to the estimate of All-Union Scientific Research Institute for Sugar Beets, to reduction in sugar content of 1.4 percent. Sugar losses in this manner total 750,000 tons per year in the USSR, or about 7 percent of overall production. In addition, the sugar beet shortfall due to inattention to proper agrotechnical measures in planting and harvesting, according to scientific bodies, has totaled 8 million tons in certain years. Figures indicate that merely the cost of harvesting losses of sugar beets and their sugar content at September harvesting surpasses the cost of additional numbers of beet-harvesting units like the KS-6 [Compressor Unit-6] which are necessary for carrying out operations within the optimal time periods.

Studies show that the major factor in improving raw material usage and increasing sugar extraction is the reduction of refinery processing time, and not the lengthening of it, which stimulates purchase prices. However, operational enterprises in many zones are not equipped to process the growing volume of raw material procurements. For example, in the sugar industry, more than a third of the sugar beet procurement, that is, 25 to 30 million tons, is annually passed around from refinery to refinery.

In the short term, there may be a substantial increase in the quality of raw materials, and, consequently, production efficiency in agriculture and the sugar industry could both rise as a result of reorganizing beet harvesting practice to make a lower cutting line on the neck of the root. This would allow, on the one hand, a 0.7-0.8 percent rise in sugar content for the bulk of the beets itself, while on the other hand, it would provide for animal husbandry a highly valuable source of succulent feeds--root tops attached to a rosette of beet greens. Current sugar beet harvesting methods employ a higher cutting line on the root. When tops are cut by the combine in this manner, they are strewn about and mixed with the soil, becoming ill-suited for feeding livestock.

Beets arrive at the sugar refinery with their stems intact. The root shoulder and stems contain sugar binding agents, therefore sugar refinery productivity with beets having higher cutting lines declines and sugar output is reduced. A top cut on beets at harvesting which leaves a head piece 12-15 percent by weight of the beet is equivalent to raising the productive capacity of sugar refineries by 15-17 percent, and reduces the demand for transport facilities to haul beets from the fields to collection points. It would be advisable to effect the realization of this measure in areas which supply raw material to those sugar refineries which have been converted to take beets according to sugar content. Accordingly, it is essential that gross beet production in these areas be increased 2 to 3 percent, in order to compensate for the lost quantity of sugar which is left in the top cut pieces of the roots.

It is essential that the usage of potatoes, vegetables, and fruits be improved through a reduction in losses of these products. Potato losses stem from a harvesting shortfall due to breaches of proper agrotechnical procedure in cultivation and harvesting, as well as in post-harvest processing and storage. As a result, the national economy receives a total of only 50-70 percent of the nutritionally valuable potato harvest.

According to the agrotechnical requirements set on farms, tuber losses during harvesting by combine should not exceed three percent, while tuber damage should not exceed 12 percent. However, studies conducted at the VISKHOM [All-Union Scientific Research Institute of Agricultural Machine Building] using both domestic and foreign combines demonstrated that potato losses--depending on the soil and model of harvesting machine--reached 12-30 percent, and tuber damage, 30-40 percent. Potato tube damage during harvesting and transport leads to major losses during storage approaching 18-25 percent.

Improving operations and increasing accountability of procuring organizations both have great agro-organizational importance for the reduction of losses and the fuller use of potatoes, vegetables, and fruits.

Of course, even the most improved wholesale facilities and processing enterprises are not equipped to store and process vast quantities of a perishable product. No small amount of it will spoil in depots, while a lower quality product enters the commodities network. Therefore, the question of fall/winter storage of potatoes, vegetables, and fruits on kolkhozes and sovkhoses must be resolved. From there they could be shipped to commercial markets as the need arose, thereby creating essential technical production facilities, particularly in the area of developing modern storage depots and specialized transport, but also for initial processing of vegetables and fruits. It would be advisable to store only reserve amounts of products in municipal wholesale depots.

However, problems of storage and processing of commercial agricultural products area intensifying to the extent that we have not managed to achieve a correspondence between the capacity of processing enterprises, the capacity of storage facilities, and the total amount of raw material. Thus, during the 9th Five-Year Plan, the average annual volume of potato purchases in the public sector totaled 10.4 million tons, while for 1976-77, it was 11.5 million tons. In the years 1976-77, there remained in storage on farms 22 million tons of potatoes, while potato storage facilities at the beginning of 1978 had a capacity of 8.2 millions tons.

For the years, 1976-77, vegetable production on kolkhozes and sovkhoses averaged close to 17.6 million tons, while state purchases were 15.1 million tons. Two and a half million tons were left on farms, and the total vegetable storage capacity of those farms on January 1, 1978 comprised 1.5 million tons. The situation with fruit storage facilities is even more critical. The

capacity of cold-storage facilities on farms consists of somewhat more than 600,000 tons.

It should be pointed out that part of the vegetables, potatoes, and fruits remaining on the farms is substandard, and a certain amount of them could be used for the internal needs of the farms. However, the largest amount of leftover products represents an essential reserve for increasing commercial stocks. The shortage of storage facilities, specialized transport, and processing capacities on farms leads to major losses and to kolkhozes and sovkhoses receiveless of a large part of the profits than they should.

In 1971, 1,302,000 tons of vegetables, fruits, and vines were expended for feed purposes, or were ruined in storage on farms, while in 1975, the figure was 1,631,000 tons, and in 1977, 1,719,000 tons. Expressed in monetary terms, (in selling prices which were current for the corresponding year), farm losses in this manner totaled respectively, 182, 262, and 279.2 million rubles.

Procuring organizations also employ a great deal of labor in the storage of these products. In 1976-77, USSR Ministry of Trade organizations purchased an average of 5.8 million tons of vegetables, while provision for cold storage of vegetables totaled about one million tons. Purchases of potatoes in trade and consumer cooperative organizations for 1976-77 averaged 10.5 million tons, while provision for storage was about 6.5 million tons. With such a low level of provision for storage facilities, plans for their construction are still not being fulfilled.

Large losses of valuable food products are being permitted in enterprises of the meat/milk industry. An especially large amount of meat is lost in the season for mass shipments of cattle due to inadequate capacity and incompleteness of existing equipment. In addition, many cattle are being held too long on farms, losing weight and meat quality in this way. In the 8th Five-Year Plan, with an increase of cattle purchases of 37.3 percent, capacity for their processing increased by only 2.6 percent, and, in the 9th Five-Year Plan, the figure were, respectively, 32.8 percent and 7.7 percent, while in the 10th Five-Year Plan, 22.1 percent and 15.2 percent. Many operations in the processing industry, as for example, the boning of carcasses, were carried out in the vast majority of cases by hand, and at that, up to 8 percent of an animal's overall meat production remains on the bones.

The imbalance in the growth of the output of a livestock product and capacities for its processing and storage prevents the efficient use, not only of meat by-products (blood, liver), but even of the basic carcasses due to the lack of mechanized sorting stations and freezers. Currently, the meat industry is annually receiving 400,000 tons of meat by-products, and using 10-12 percent of them. A large part of the meat is preserved by means of a primitive freezing technique, which lowers its quality.

One of the crucial factors in improving the usage of an agricultural product is its quality. High quality agricultural raw material determines the

intensity of economic development for all systems of the agro-industrial complex. Suffice it to say that an increase in the sugar content of sugar beets of one percent raises sugar output and reduces the demand for raw materials by nearly 8-10 percent. A corresponding reduction in the demand by the national economy for production capacities in sugar beet processing, for combines, and for harvesting and shipping facilities is in evidence; there is less demand placed on crop lands, and the demand for basic production materials for all segments of the national sugar production complex.

Modern achievements of government breeding, seed production, and agro-technology make it possible to increase the sugar content of beets delivered for processing up to 20 percent, that is, by 4-4.5 points higher than the current level.

An overall increase in protein content of grain stores of only one percent allows a supplemental yield of about 500,000 tons of plant protein. An increase in the starch content of potatoes of one percent means that a yield of more than 800,000 tons of starch will be realized. Government breeding experts have created a potato variety with a starch content of up to 24 percent. The attainment of this level in agricultural production will permit a supplemental yield of roughly 8 million tons of starch, or almost 70 percent of the current level of national production.

An increase in the butterfat content of milk of 0.1 percent at the current level of its procurement is equivalent to a butter production increase totaling 80,000 tons, or about seven percent of the annual production volume.

Meat output from the processing of meat cattle of medium levels of fatness totals 45-40 percent, while for high fatness levels it is 56-68 percent. An increase in the relative number of cattle at high fatness levels would be a major factor in expanding the meat resources of the country.

The decline in the use of agricultural products is a direct consequence of the fact that efforts toward improving their quality are currently still not very systematic. Certain measures which were developed in this area do not fully correlate with the production and processing of agricultural products. Consequently, economic stimulation does not always guarantee the implementation of suitable measures for improving the quality of raw materials. For example, the introduction of a new GOST [state standard] for milk was not adequately backed up with the establishment of a wide range of material-technical provisions in either the agricultural sector or the milk industry. Kolkhozes and sovkhoses have still not been fully supplied with milk refrigeration equipment, and milk industry enterprises have not been made ready for shipments of various grades of milk.

The methods and instruments employed for determining the quality of agricultural products do not meet current requirements. The quantity and quality of gluten in wheat, butterfat level and bacteria count in milk,

fatness levels of cattle, sugar content of sugar beets, and the oil content of oleiferous seeds are all determined by antiquated methods and with less than satisfactory precision. For example, according to the GOST, farms and dairy plants are permitted a 0.1 percent divergence between their respective data for butterfat content. With milk purchases topping 60 million tons per year, this permissible level of divergence equilibrates to 2 million tons of milk with a basal fat content of 3.2 percent.

At the same time, the bulk of kolkhozes and sovkhoses are not supplied with control-measurement devices, apparatus, and qualified personnel for determining the quality of finished products. As a result, farms do not determine the quality of agricultural products, and this, to a large extent, prevents them from developing and implementing a system of measures for improving their quality.

The lowering of the quality of agricultural products is accompanied by the appearance of a disproportion in the development of interrelated branches of the agro-industrial complex and by a general reduction in efficiency of production for the public sector. Thus, right up to the present time, disputes between beet growers and the sugar industry have not been eliminated. The accepted system of paying for beets by weight encourages the growing of varieties with low sugar content and the implementation of measures designed to increase the total root crop. From 1965 to 1977 the sugar content in beets dropped 2.2 points. As a result, the relative expenditure of raw materials in sugar production increased by almost 15 percent. This means that these conjugate agro-industrial branches produce and process 15 percent more sugar beets, while failing to increase the nation's overall volume of sugar production.

Or another example: Farms are interested in growing tomato varieties which provide a higher gross yield. However, for the canning industry, the major consideration is the ratio of dry to liquid matter in the tomatoes, since this is what determines the expenditure of raw material per unit of production. If, with tomatoes having a dry matter content of five percent, 1050 kg of raw material is expended in the manufacture of 1000 conventional cans of tomato paste, then six percent will require 890 kg, and 3.5 percent, 1500 kg. Raising the dry matter content of tomatoes by one percent allows a reduction in raw material expenditures of 15-20 percent, which, in the final analysis, leads to an increase in production efficiency.

Despite the proliferation of GOSTs (more than 500) and OCTs [all-union standards] (more than 30) in the country, not all agricultural products are covered by standardization. There is no national GOST for tomatoes, fruits, and grapes. The purchase of these types of products is carried out according to local technical standards. The GOST for oleiferous seed culture has become obsolete.

For organizations of the USSR State Committee for Standards there is strong need to more efficiently control the further development in branches of the

agro-industrial complex of state certification of product quality, as well as to develop complex programs of standardization which meet current requirements for the development of production in the public sector.

Thus, the analysis indicates that in the complex system of measures for improving the quality of agricultural products there are no ties that bind. Planning for quality involves not only the development of requirements for the quality of a product through a system of GOSTs, OSTs, and RTUs [republic technical requirements], but also the broad application of a system of economic stimulation based on prices which take into account the quality of a product.

First of all, it is essential to develop and implement a complex program to establish a unified state system of quality control for raw materials and finished products, and to prepare suitable material-technical standards for a transition to the production and processing of agricultural products according to their quality.

It is not possible to provide for the implementation of measures for quality control of agricultural products without the creation on kolkhozes and sovkhozes of laboratories equipped with modern instruments, apparatus, chemical reagents for conducting analyses, and staffed with qualified personnel. So as to eliminate differences between procuring organizations and farms over the evaluation of product quality analyses, it would be advisable to set up independent laboratories.

In order to take active measures to improve the usage of and eliminate losses in agricultural products, it is essential to scientifically study and develop well-grounded methods of determining and accounting for product losses at all stages of their production, harvesting, laying-in, initial processing, shipping, storage, refining, and sale in the agro-industrial complex system. Such a study is extremely difficult due to the absence of any kind of full and precise accounting for losses in agricultural products. Agencies of the USSR [Central Statistical Administration] would be well advised to initiate such an accounting.

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